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4 September 1985

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH, AND DEVELOPMENT

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WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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ASIA

HONG KONG

LITTLE USE OF TELECONFERENCE FACILITY IN HONG KONG

Hong Kong HONGKONG STANDARD in English 4 Jul 85 p 5

[Excerpts]

WHAT is teleconferencing and how often is it used in Hongkong?

Teleconferencing is simply video and voice communication between people in two or more places via satellite.

Mr Mark Kwong Jim, sales administration manager of Cable and Wireless (Hongkong) Ltd said that the present use of the facility in Hongkong was small.

In its simplest application, teleconferencing consists of conference facilities in which only telephones are used.

But future applications predicted in the United States include screen projections with high quality life-size images, full stereo transmission together with high speed document transfer and integrated graphics projection.

Teleconferencing is predicted to replace plain telephone transmissions as a commonplace but richer form of communication.

But at present, customers in Hongkong are mainly the large corporations.

The operation in Hongkong is part of the world's first global television satellite network, WORLDNET, launched by the US Information Agency.

Last year, Hongkong journalists had the chance at the Cable and Wireless studio to question US Secretary of State, Mr George Shultz, in a Washington studio.

The information officer of USIS, Mr David Miller, said that there had been a few "technical bugs" in tele-transmissions when it was started last year but now the transmission is perfect.

How much does a teleconference cost?

The cost in Hongkong for 76 minutes one way video (with Hongkong as the receiving partner) and a two way audio service is around $13,000.

This includes charges for studio equipment, recording and staff but does not include the charges for the up-link from the transmitting partner.

Cable and Wireless at present lacks the equipment for up-link such as cameras.

The fairly high cost seems to be the leading factor detering potential users. But technological advances are expected to lower the cost in the future.

The satellite time must be booked at least a week ahead.

"There are prospects for development," said Mr Mark.

CSO: 5550/0134

HONG KONG

HONG KONG-PRC INTELPOST SERVICE TO BEGIN SOON

Hong Kong HONGKONG STANDARD in English 4 Jul 85 p 5

[Text]

INTELPOST service to China may start in a few weeks.

Both the Hongkong Post Office and the Guangdong Postal and Telecommunication Administration have already agreed in principle to it.

"Now, it's a question of finalising the details and solving the technical problems," the Deputy Postmaster General, Mr David H.T. Lan, told a luncheon meeting yesterday.

The service will first be introduced in Guangdong.

It will then be extended to other provinces, he said.

"Once the Guangdong service starts, the only problem of extending it to other provinces is merely technical.

"It's only a matter of time before other provinces can enjoy the service," he said.

The Post Office also plans to extend the service to Canada.

Talks with Canada have reached the final stage, he said.

The Intelpost service is a high-speed facsimile transmission of high quality black-and-white reproductions of documents, business papers, drawings and personal messages up to A4 size.

"The service is of great help to commercial activities," he said.

The Post Office also plans to extend its speedpost services to more Chinese cities.

At present, speedpost services are offered to major cities like Beijing and Shanghai, he said.

On telecommunication services, the Post Office is formulating a territory-wide transmission plan for the extension of FM broadcasting to all places in Hongkong.

"If implemented, the plan can provide seven FM services throughout the territory," he said.

At the same time, the Post Office has designed a radio network and drawn up an appropriate licence for the use of radio equipment on pleasure vessels.

A licence has been finalised which will enable pleasure craft to carry and use radio equipment with a minimum degree of control.

At present, licences of radio equipment on pleasure vessels are the same as those of ocean-going ships.

And the application and installation of the equipment are "complicated", Mr Lan said.

"For pleasure craft, perhaps a simple system of licensing will be adequate. After all, pleasure craft in Hongkong are mainly for pleasure purposes and do not travel over long distances," he said.

A licence will be issued if the basic system is installed. And the operator will not be required to take an examination.

As emergency signals and installations are built into the system, the safety of pleasure vessels can be improved.

"Subject to the approval of the Governor-in-Council, it is expected that the first licence could be issued in a couple of months," he said.

Meanwhile, the Post Office is also involved in the selection of a suitable system of multiplex sound on television.

"Our responsibility is to ensure that the system can work...with full compatibility to existing television transmissions.

"The system should also be widely adopted in other parts of the world so that... equipment could be widely available to the public at easily affordable prices," he said.

A pilot scheme has been completed and the results are very encouraging, he said.

Multiplex sound is a system which provides multilingual stereophonic services to programmes.

CSO: 5550/0135

HONG KONG

THIRD MOBILE PHONE SERVICE TO BEGIN OPERATION

Hong Kong SOUTH CHINA SUNDAY MORNING POST in English 23 Jun 85 Supplement p 1

[Text]

HONGKONG'S third mobile phone service for motor vehicles, Hutchison Telephone Co, starts operating on Wednesday.

It arrives in the market nearly 18 months behind one competitor, CSL, and three months after the other, China Telecom Systems.

CSL is a subsidiary of Hongkong Telephone, while China Telecom is owned by an international corsortium which includes an American manufacturer of telecoms equipment, a Swedish operator of a telephone system, a local company called Onwel Holdings with a multitude of interests, and a unit of China Resources.

The Hutchison company is entering at a time when the industry is rocking with suggestions that there is no room for three such services to make a profit.

Many expect some cut-throat competition.

Peter Hutton, managing director of China Telecom, professes not to know whether there is room for three.

"I know there's enough business to allow us to operate profitable services," he said. "We can recoup our investment and make a profit."

"Our charges are lower than others, but they're based on costs. We're not undercutting anyone."

His company is sticking to its rate card, he said. "But that shouldn't preclude us from offering discounts to large customers or those with a special use.

"That's just being competitive. We can't sell our service at lower than cost or we'll go under."

CSL executives have been critical of the Government for licensing the third service.

They expected one competitor but were surprised when the Government decided in April last year to licence two more.

They have since complained that a fundamental obligation imposed on CSL by the Government was that its system must offer full coverage of the territory.

This required a capital investment of close to $100 million, because of a need for 14 radio transmitters, compared with only three needed in Singapore's flatter terrain.

CSL executives admitted that they were stunned at the news that the Government had not insisted on territory-wide coverage for the other licensees.

They certainly will be among those interested in seeing what new features and functions the Hutchison company brings to the market.

CSL boasts that it will be surprised if the new firm has anything not already offered by the first two licensees.

If there is a shakeout, customers will be hurt, because the three systems in Hongkong are technically incompatible.

CSO: 5550/0133

HONG KONG-GUANGDONG FIBER OPTIC LINK PLANNED

Honk Kong HONGKONG STANDARD in English 11 Jul 85 p 3

[Text]

THE volume of telephone communication between Hongkong and Guangdong has more than tripled in the past two years.

This was stated yesterday by the general manager (local engineering) of Cable and Wireless Hongkong Ltd, Mr Fung Hakming.

Cable and Wireless has entered into a joint venture with the Guangdong Posts and Telecommunications Administrative Bureau to lay an optical fibre cable from Hongkong to Guangdong, said Mr Fung.

The cable will add 2,000 voice channels to the 3,000 existing now, he said.

He stated that China's rapid economic development and the strengthening of its telecommunication services had led to more demand.

According to Mr Fung, the joint venture is now in the technical planning stage. Tenders will be called and equipment purchased at the end of the year.

According to rough estimates, the cable, measuring 260 to 270 kilometres, will be laid at a cost of US$8 million to US$10 million.

The number of channels in the new system can be increased to 40,000 and such a large capacity should cater to the demands of Hongkong-Guangdong telephone communication facilities for the next 20 years, said Mr Fung.

It is still not known whether the optical fibre system or the radio system now in use will cost less.

But, according to Mr Fung, whatever the system employed, customers will pay the same rates for phone calls to Guangdong.

Mr Fung said that optical fibre had been used since 1981 by the Hongkong Telephone Company and it comprises about onethird of the channels now in Hongkong.

CSO: 5550/0136

PEOPLE'S REPUBLIC OF CHINA

EXISTING WORLD SATELLITE COMMUNICATIONS EVALUATED

Shanghai DIANXIN KUAIBAO [TELECOMMUNICATIONS INFORMATION] in Chinese No 10, Oct 84 pp 1-6

[Article by Ni Zhaojing [0242 0340 0079]: "Satellite Communications and an Information Society"]

[Excerpts] Domestic Satellite Communications

The following are the three modes of domestic satellite communications:

The first mode is used to handle communications in geographically remote areas, as in Canada. Canada was the first country to send up communications satellites for use in domestic communications. The northern area of Canada lies in a frozen area where the population is sparse, dispersed, where geographical and climatic conditions are harsh, but where resources are abundant, and communications and transportation are both very difficult. Since 1972, Canada has successively sent up four series of domestic communications satellites, the Anik-A, B, C, and D, and has set up more than 90 ground stations to solve the problems in the northern regions of communications, television broadcast, education, and medical treatment. Among these ground stations, and besides the main stations, there are unmanned stations, which use double back-up and automatic transfer on fault. At a certain time each year, main station maintenance centers send out an aircraft carrying various auxiliary boards, and do a tour of inspection and maintenance, exchange faulty boards, and then bring them back to the maintenance center for inspection and repair. This method of utilization and repair is both economical and dependable. Canada has also launched high power (200 watt) broadcast satellites and low power (20 watt) communication satellites, and is using the 12 GHz band for a test of satellite television broadcasting. The results they have achieved have been that it is not economical to use the high power transmission satellites because the area is too large, and they have decided to use the low power communications satellites and cover each of the four time zones separately for television broadcasting.

Furthermore, there is Indonesia, called the country of a thousand islands, but which in fact has more than 3,000, and stretches more than 5,000 km from east to west. The establishment and maintenance of a terrestrial communications

network would be extremely difficult, as well as uneconomical. Since 1970, they have purchased and launched two American-made satellite series, Palapa-A and B, and set up 170 communication ground stations for use with domestic satellite communications, as well as leased out unused transponders to Southeast Asian countries. Indonesia's domestic satellite communications system, besides its use in communications and television broadcasting, is also used for teaching by use of the carrier single speech path modulation method; they use a slow scan television and transmit a college lecture via a telephone circuit on a satellite. This is provided for viewing and listening to 10 colleges, and students can ask questions via the satellite returning voice channels. They are also using this method to develop television and telephone conferencing. The Palapa B satellite, launched recently in 1983, uses time division multiple access mathematically modulated communications, as well as adding block data exchange tasking for use in computer communications and data collection. The domestic satellite system that Indonesia has set up has not only stabilized the rule of governmental authority, but has also advanced the development of the electronics industry. The groundstation manufacturing technology they have imported has allowed them to be able to already produce small scale groundstations with 5 to 6 meter antennas.

The second mode is used as junction circuits, national television broadcast circuits, and completely digital communications circuits between large companies, all in high capacity, long distance communications between large cities-- the United States is a country that uses this method for satellite communications. Although the terrestrial communications networks in America are a spider web of microwave junction circuits and cable carrier circuits, for reasons of economy, quality, and flexibility, satellite communications are an even more effective means of communication. American domestic communications are all run by private enterprises. The United States Federal Communications Commission (FCC) has established an open policy towards space, where any enterprise with the ability to invest can launch and manage communications satellites. At present, there have already been 18 communications satellites launched by 4 companies. with more than 500 communications ground stations and more than 10,000 television receive-only stations handling communications and television broadcasting. By 1987, there will be 8 companies launching 26 communications satellites, while communications ground stations will develop to more than 10,000. Among the current four companies, there are four satellites in the Westar system of the Western Union Company, which has itself established eight ground stations as high capacity junction circuits for telegraph, TTY, and newspaper facsimile printing between major metropolitan areas. The American Satellite Communications Company (ASC) leases transponders and has established 16 ground stations for junction circuits in long distance communications. The four Comstar communications satellites launched by the American Communications Satellite Company (Comsat) are all leased to American Telephone and Telegraph (ATT) and General Telecommunications Company (GTE) of the Bell System, which have seven ground stations and which serve as high capacity junction circuits for long distance telephone between major cities. The Radio Company of America (RCA) has launched eight Satcom satellites, has built seven ground stations, all chiefly for television broadcasting and high speed data transmission. As for the more than 250,000 4.5 to 5 meter television receive-only stations erected by television subscribers, after they have received the

television signal it is then sent to the home for viewing over coax cable systems. The Satcom satellites have been especially configured for an antenna beam that covers Alaska, where there are more than 150 communications ground stations to solve the communications and television broadcast problems of the state of Alaska. The Alaskan satellite communications situation is extremely similar to that of the northern areas of Canada. The largest computer company in the United States, IBM, has invested jointly with Comsat and the Aetna Life Insurance Company to form the Satellite Business System, which has launched two 11/14 GHz frequency band communication satellites to provide completely digitized telephone, data, and computer communications for American large businesses, as well as television service. Groundstations with both 5.5 and 7.7 meter antennas have been set up on the roofs of business high-rises so that there can be direct communications without passing through terrestrial networks. There are already 375 of these groundstations, which will develop to 10,000.

The third mode is the domestic satellite communications network set up by nations formerly lagging behind in communications, which is a national communications network for domestic long distance communications and television broadcasting. To take Brazil as an example, Brazil is a third world country in South America, with a land area of 8.5 million sq. km, just smaller than China, and a population of 1.3 billion. It has a complex terrain and the population distribution is not even. Communications were formerly completely backward, where long distance calls would take two and three days to complete between provinces. In 1973, Brazil began using international transponders, and successively set up 61 ground stations for use in domestic long distance communications, at the same time establishing microwave junction circuits, which also suited satellite communications. After 10 years of development it now forms a national communications network. There are currently 1,533 cities throughout the country that can automatically dial long distance, as well as automatically dial international long distance to 67 other countries in the world. In 1984, because of the developments in communication services, Brazil was already leasing 10 international satellite transponders. For purposes of economy, it has decided to buy a communications satellite from America in 1985, which would then be launched as a communications satellite exclusively for Brazilian use, to further develop the national communications network. The Brazilian experience in developing national communications into a modernized communications network over 10 years time is worth looking at by third world countries and China.

The Development of Satellite Communications Technology and Service

Technically speaking, satellite communications have already largely reached a mature state, but are still developing. Because satellite communications are more economical than other long distance communication methods, developments in satellite communication services are just unfolding. Future developments in satellite communications will be:

1. High frequency bands. Currently, most bands are 4/6 GHz, the original width of which was 500 MHz, but that has already widened to 1,100 MHz. The 11/14 GHz band presently getting wider usage has widened to 1,000 MHz, while the 20/30 GHz high band has already widened to 3,500 MHz, which Japan is now

officially using in its domestic satellites, and which will be used by Italy and the United States, as well. Satellite capacities will become greater and greater with developments in high bands.

2. High capacity satellites. Using high bands and multiple band reuse, then adding the appropriate modulation method, as in single side-band telephone, the capacity of each satellite can increase to millions of voice circuits.

3. Integrated satellites will integrate many uses and services, such as communications, television broadcasting, weather, prospecting for natural resources, into one satellite, which will lower the costs of satellite communications. Integrated satellites can save approximately 40 percent of the investment over single use satellites.

4. Digital satellites. If satellite communications use digital modes, they can integrate various communication services into one channel, and can as well add beam exchange or baseband handling for multiple access exchange communications, which suit the requirements of Integrated Service Digital Communications Networks (ISDN).

5. Small stations oriented toward many satellites. When ground stations use offset multi-feeder source technology, they can be directed toward several satellites. In this way, one ground station antenna can connect with circuits from several satellites, allowing a great reduction in establishment and operation costs.

6. Reducing the spacing between satellite orbits. Stable satellite orbits are limited resources shared in common by mankind, and to reduce satellite spacing will allow even more satellites in stable orbits, which will consequently increase communication capacity for orbits. Also, bringing down antenna sidelobe radiation levels of satellites and ground stations will reduce satellite spacing interference, and further reduce satellite spacing. Currently, satellite spacing can be reduced from 4 degrees to 2 degrees, which allows orbit capacity to be doubled.

Developments in satellite communication services will grow quickly. International communications, and especially trans-Pacific communications, have in the last 10 years gone from a situation where sea cables were responsible for 70 percent of traffic to where satellites now have 70 percent. International satellite organizations estimate that in the next 10 years international satellite communication circuits will double; while because of the low cost of domestic satellite communications, the cost in America of transmitting television is only from 16 to 43 percent that of microwaves, and for telephone it is only 14 percent. By 1990 the United States will have opened 20,000 television conferencing circuits, and it is estimated that if satellite circuits are used for transmission, the per minute cost could be as low as 50 cents (at present long distance calls are 10 to 30 cents a minute). American experts also feel that in the next 10 years optic fibers will not be able to replace satellites. By the end of this century the cost of satellites will be below that of optic fiber circuits, so each country is striving to develop their domestic satellite communications, or their regional satellite communications. It is not just with large areas, like Australia, Brazil, the

Arab League, but some small countries as well, like Mexico, Iran, Argentina, Columbia, and even France and Italy, that want to use satellites for domestic long distance communication, and France is already preparing to use satellite circuits for 40 percent of its long distance communications.

Conclusion

The capacities of China's communication networks are small, they are not dense, there is limited investment, their set up time is not fast, and at present they cannot keep up with economic construction and the requirements of contacts in science, culture, and in the people's everyday life. As the world is about to enter the "Information Society" we must immediately take up full scale planning. We need to not only absorb the technology of advanced countries, but also want to absorb the experience of outstanding achievements by third world countries in setting up communication networks; we must adopt policies and put measures into effect. All this to move rapidly ahead. Looking from the point of view of the situation where we have a large country, a large population, and a complicated terrain, it would be most advantageous to establish satellite communications for our long distance communications, which would result in less investment and quick set up.

In 1972, China leased an international satellite channel and has used satellite communications in international communications, as well as successively importing four international A standard groundstations with 30 meter diameter antennas and two international B standard groundstations with 10 meter antennas. At the same time, we have begun manufacturing of communications satellites and groundstation equipment. In May 1984, we successfully launched a test communications satellite in stable orbit, the corresponding set of ground station equipment having been manufactured earlier in 1980, which has gone into functional production. The components, devices, materials used in the satellite communications equipment, with a few exceptions, were all domestically produced. Therefore, satellite communication technology has been mastered, which prepares the way for development of domestic satellite communications.

The future for development of China's domestic satellite communications should be: first stage, before we launch our formal communications satellites, we should first lease transponders on international satellites and set up some medium and small scale ground stations to satisfy the urgent need for long distance communications from the capital to outlying areas (like Tibet, Xinjiang, Inner Mongolia), as well as to important mining and base areas for oil, hydroelectricity, coal mining, and weather stations. The second stage should be to launch communication satellites of our own manufacture, to set up large capacity medium and small scale groundstations in a planned manner, to form long distance communications networks of a national scale between the capital and provincial capitals, and between provincial capitals and important cities, as well as television reception and broadcasting networks in various urban areas. Moreover, these should be complemented with medium and short distance microwave junction circuits and wired circuits, at the same time that we set up long distance, intra-city, and rural telephone exchanges to complete an information communications network that goes in all directions and is as dense as spider webs, which will suit the needs of the four modernizations.

Questions still existing are not in the development of technology and the development and manufacture of equipment, but are in having an authoritative national purchasing, and overall planning and management. China must not only take in internationally advanced equipment for our own use, but must at the same time take in the experience of scientific management before we can develop our communications networks. This will have its advantages and will establish an "Information Society" in China with socialist characteristics, to gain our place in the world.

12586
CSO: 5500/4145

PEOPLE'S REPUBLIC OF CHINA

RADIO SIGNALS FOR MOBILE PHONE SYSTEMS STUDIED

Shanghai DIANXIN KUAIBAO [TELECOMMUNICATIONS INFORMATION] in Chinese No 11, Nov 84 pp 21-28

[Article by Yang Liuqing [2799 3966 3237]: "Radio Signal Propagation of Land Mobile Telephones"]

[Excerpts] From the point of view of grouped networks, there are in public bus telephone systems the different types of large area modes, medium area modes, and small area modes (cellular). In the calling modes there are the different modes of public channels, rotating non-fixed positions, rotating fixed positions, and rotating dispersed positions. As for transmission modes for radio signals, there are the two types of digital and analog. This article discusses the latter. Although using that signal mode is in fact the most suitable, this cannot be discussed all at once. This is not only concerned with grouped network modes and calling modes, but also concerns the national economic, technical, and equipment situations as well.

Radio signals, whether digital or analog, must all ensure the reliability of the signal continuity. It is regrettable that the transmission channels for mobile phones belong to channels of changing parameters, which makes the transmitted radio signals subject to harm by two main sources of error-fading and ignition noise. Therefore, we will first discuss problems connected with wave propagation in mobile service, and make clear the degree of effect on digital and analog transmission. Only then can we seek out reasonable methods of solution, and reasonably select a radio signal mode that is based on practical conditions.

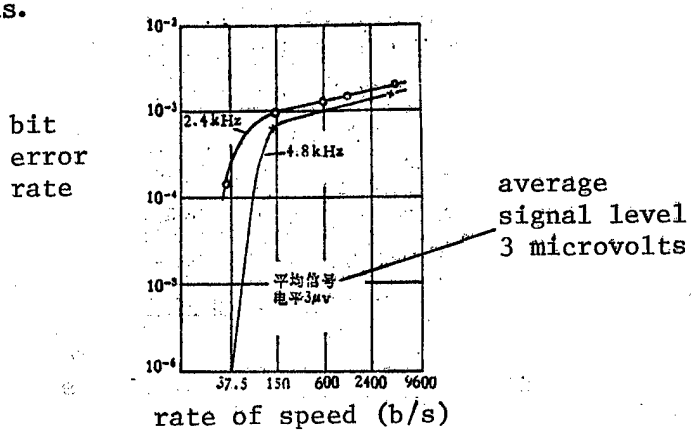

Fig. 6. Relation between code speed and bit error rate.

Figure 6 shows the relation of bit error rate to code speed. One can see from the curve that when the code speed rises from 37.5 bits per second (b/s), there is a dramatic rise in the bit error rate. At 37.5 b/s, the bit error rate at 4.8 kHz is only 10^{-6}, but at 150 b/s it has already risen to 10^{-3}, an increase of nearly three orders of magnitude. The increase in bit error rate introduced by a further increase in code speed is very small. When the working frequency is 462 MHz and vehicle speed is 45 km per hour, there are 40 instances of fading every second, so this curve also shows that the time of a bit is less than the period of fading, and the bit error rate will clearly increase.

Another set of test data shows that when code speed is high, approximately 20 percent of the errors are introduced by ignition noise, and that 80 percent of the errors are from fading. As for the monotone mode, even when signal levels are at -10 dB, ignition noise will not produce errors. The general persistence of ignition noise static is 10 ms. Because in China methods for preventing spark interference are rather inferior, the error rates introduced by ignition will possibly be correspondingly greater.

In typical mobile radio systems the smallest received level to voice tone is, generally provided at from 5 to 15 dB. That is to say, they can use the 5 to 15 dB average signal level generally in the service area. Therefore, design of signal systems will be faced with the following two choices: using a very low code speed (for example, lower than the critical code speed of 37.5 b/s), used to correct errors in symbols without needing to apply error correcting coding techniques. Or, adopt a high code speed and apply error correcting coding techniques to produce a satisfactory error performance (10^{-5} or 10^{-6}). Because increases in the bit error rate introduced by increases of code speed are so small when at high code speeds anyway (does not produce conditions of modulation fading), then aside from the technical difficulties, we ought to try as hard as possible to use the highest code speed because that can contain the greatest amount of information. There are apparently no advantages to using a medium coding speed (like 150 b/s) because error correcting coding techniques must still be used.

The relation between the period of fading and the code symbol period is a function of the radio-frequency carrier frequency, vehicle speed, and average level of received signal. Increase in critical code speed is exactly comparable to increases in carrier-frequency or vehicle speed, and the critical code speed also increases as the average signal level increases, but this is not a linear relation.

In order to allow digital signals to attain satisfactory error characteristics, we must make use of improved technology.

We ought first to point out that the rapid fading of mobile received signals is rather objective, [7] for example, when 10 percent of the time they drop below the signal envelope there is an effective 10 dB of fading, 1 percent of the time there is 20 dB fading, and 0.1 percent of the time there is 30 dB fading. To take 840 MHz as an example, if the vehicle speed is 48 kmh, 10 dB of fading is 30 times per second and 20 dB fading is 10 times per second. We can use diverse methods of reception to reduce this kind of rapid fading.

During mobile reception, it is ail right if the distance between spatially diverse antennas is a half wavelength long or somewhat longer than a half wavelength. At this time, two signals will not be considered related. There are even people who feel that one-quarter wavelength is all right. At any rate, diverse spacing is very small.

When antenna distances are a half wavelength, the probability of a two inch antenna receiving a signal with concurrent 20 dB fading is 0.01 percent, while the probability for 20 dB of fading with a one inch antenna alone is 0.1 percent, so after two inch antennas are spatially diverse, fading is greatly reduced.

This sort of diversity is suitable for use with base station antennas, but because the chief dispersion field is in the vicinity of the mobile unit along the propagation path from the base station to the mobile unit, in order to achieve the goal of diversity for the base station antennas, the distances must be greater. The authors of some documents have felt that antenna distances of approximately 30 wavelengths are suitable, while others feel that from 15 to 20 wavelengths is good. Of course, if the field is limited, one can use polarity diversity reception.

We have already pointed out earlier that at higher code speeds, if we increase code speed, the resultant bit error rate does not increase much. Therefore, we can then add a few check bits to make it easier to achieve a high degree of transmission under conditions of similar bit error rates. In the UHF bands the above comparisons have already been made for 4,800 and 1,200 bits per second. At 1,200 b/s a (15,7) code was used, at which time 560 bits of information were transmitted each second. Using a (19,7) code at 4,800 b/s, and adding 4 check bits, we could both attain the same reliability (even better), as well as more than a three-fold increase in the amount of information, which is very significant.

By using error correcting codes we can raise the rate of efficiency. It is not suitable to have only the catching of errors and not the correcting of them, especially for signals at rather high rates of code speed. That is because once errors have been discovered, information can only be discarded and not corrected, and the success rate will lessen. This is also to say that the phenomenon of call loss will be great, so when the prescribed holding time for each call is constant, there will be a great effect on the subscriber capacity for mobile phone networks. Therefore, error correcting codes are very important.

Analog Signals

Among analog signals there is the commonly used monotone signal, the code symbol time for which is quite long. For example, in the medium capacity mobile telephone system Japan installed for Bahrain, the radio signal uses an audio sequential code format with a code symbol persistence of 250 ms. China's small capacity "SC-MTS-2" mobile phone system (formal service already begun in Shanghai), an audio-frequency sequential code signal with a code symbol persistence of 200 ms is used.

As discussed above, this kind of signal is little affected by fading and interference during transmission, and in addition at the receiving end a tuning fork wave filter of only a few Hz bandwidth is necessary to receive, so neither diversity nor error correcting codes are needed, while still ensuring the dependability of the signal persistence. This is technically easy to implement and the manufacturing cost is reasonable, all of which are advantages.

A disadvantage of this signal is that the code symbol time is quite long. Especially in the small area group network mode there are many types of signals and the persistence is long (otherwise, many types of audio frequencies would be needed, system implementation would be great, costs would be high, and the advantages to analog signals would be lost), therefore when it is difficult to use analog signals we ought to use high speed digital signals, error correcting codes, and diversity technology.

As for large area system or medium area system network modes, and especially the former, because the signal mode is rather simple, there is not a great effect on persistence, and we can use analog signals, and develop their advantages. Early equipment abroad used 100 b/s digital signals, where each code word was composed of 16 code symbols, 5 of which were synchronous codes, 5 were information codes, and 6 codes were used for error checking (no correction). In this way it took 160 ms to send one code word, while with analog signals, one code symbol is just one code word, to send which takes 200 ms, so added time is really very little. Also, errors in the received code are rather great for the digital, and although they may be discovered, the calling loss created will effect the usability by the subscriber. Therefore, the tendency among workers in the field has been to recognize that it is best to use analog signals, add correction codes, or even diversified high speed digital signals.

If we use tuning fork wave filters to receive audio-frequency sequential code, and because the tuning fork needs a certain set up time τ_a or fading time τ_b for pass through or dissipation of the pulse modulated audio-frequency, if that time is extended too long, it will cause the early and later pulses to join together to create signal disturbance. If we also consider the stability of the tuning fork frequency, we should require that the persistence of the code symbol be somewhat longer than the set up time (or fading time) for the tuning fork.

Bandwidth B differs when the tuning fork is 3 dB, and the necessary set up or fading time is also different. When the tuning fork resonance frequency and the audio-frequency frequency are the same,

$$\tau_a = \tau_b = \frac{2.3}{\pi B}$$

When B is 2, 3, 4, or 5 Hz time, τ_a (or τ_b) is 365, 245, 183, and 146 ms, respectively.[11]

Using tuning fork wave filters to receive audio-frequency sequential code not only strongly resists the noise in the machine, but also strongly resists fading and interference, which ensures the reliability of the signal persistence. The following experiment proves this point.

Causing an audio-frequency sequential code of 200 ms code symbol length to be split for a certain time (where the signal is completely lost) and to also mixing in noise, the tuning fork wave filter can still correctly and without error read the code.

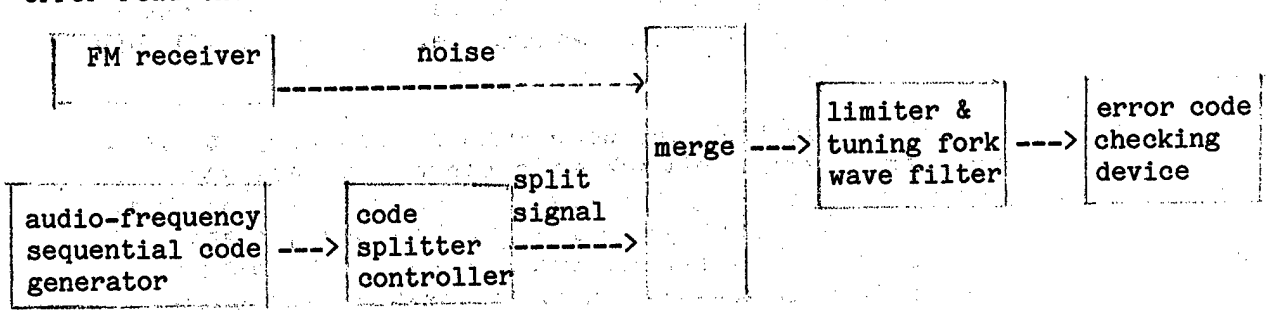

Fig. 9. Error code detection flowchart for audio-frequency sequential code

The flowchart for the experiment is shown in Figure 9.

The FM receiver is modulated on the input frequency without a signal together with shielding, and output is white noise in the audio-frequency band. When the audio-frequency sequential code at the time of transmission is 1,595 Hz, at empty signal times it is 1,538 Hz. Noise and signal effective value at the input terminal of the limiter are 100 mV and 200 mV, respectively, both greater than the gate limit value of the limiter that is 70 mV. The code splitter controller is then turned on (when off is through directly), breaking up the audio-frequency sequential code. During the time of the break up, there is only noise at the input terminal of the limiter and no signal. There are three forms of splitting. The first form has a split time of 5 ms, with two protective intervals between the splits of 15 ms; the second form breaks up for 10 ms, with protective intervals of 50 ms; the third form breaks up for 2.5 ms, with protective intervals of 15 ms. The error code checking device compares the decoded code and the original code during the symbol interval, producing a pulse output with every error, which is accumulated in the counter and displayed.

Each of the three forms of code splitting was tested for 16 hours when the signal-to-noise ratio was 6 dB, during which time there was never an error. This is to say that the error rate is at least better than 3.4×10^{-6}, which is very reliable.

The SRA 8000 system mentioned above [Sweden] can correct burst errors of 6 bits (5 ms), while the protective intervals must be greater than 20 bits (16.7 ms). As to the first and second forms of code splitting in this experiment, the error correcting techniques of the SRA 8000 system are not powerful enough, while the tuning fork wave filter can decode quite well (what is more, the signal-to-noise ratio before splitting is only 6 dB). The third form of code splitting is about the same as fading 57 times per second, where with each fade of 2.5 ms the signal level is completely replaced by noise, which is taking into consideration the rapid fading when vehicles are in a city. The tuning fork wave filter can still dependably decode this kind of code splitting, even where the signal-to-noise ratio before break up is only 6 dB.

The experiment described above proves that using a tuning fork wave filter to receive audio-frequency sequential code has a very great capacity for resisting fading and interference, and even using correction coded digital signals will never reach this degree of reliability.

Based on the current situation in China, to use the large area system or medium area system grouped network modes can already satisfy the requirements of mobile telephone service. Also, municipal voice communication networks are still insufficiently developed, and there are few IC components that can be added, the prices of which are high, so using analog signals is suitable. This is not only technically easy to implement, but the price of equipment is low and the capacity for resisting interference and fading is good, and reliability is high. When the economic results are considered, in the communications sphere of China's mobile telephone it would be best to use radio signals in analog mode. Of course, in keeping with China's economy and developments in its communications technology, IC circuit technology will be certain to develop, which will lower costs, and because of the requirements of high level grouped network modes for mobile telephone, in the future we will need to use digital signal modes.

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12586
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PEOPLE'S REPUBLIC OF CHINA

RADIO WAVE PROPAGATION CIRCUITS OF MOBILE COMMUNICATION SYSTEM

Tianjin TIANJIN DAXUE XUEBAO [JOURNAL OF TIANJIN UNIVERSITY] in Chinese No 2, Jun 84 pp 71-79

[Article by Zhang Yiming [1728 0076 2494]: "The Calculation of Radio Wave Propagation Circuits of a Mobile Communication System"

[Summary] Calculating the radio wave propagation circuits is one of the most important tasks in planning radio project for a mobile communication system. The various factors, such as noise, interference and fading, relating to radio wave propagation circuits, as well as the methods dealing with the factors are described. Finally, one of the methods of the engineering calculation is given in this paper. (Paper received on 31 Oct 83)

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12949
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PEOPLE'S REPUBLIC OF CHINA

MODE TRANSFORMATION IN MULTI-MODE OPTICAL FIBER

Tianjin TIANJIN DAXUE XUEBAO [JOURNAL OF TIANJIN UNIVERSITY] in Chinese No 2, Jun 84 pp 61-70

[Article by Wang Yanheng [3769 1693 1854]]

[Summary] In this paper the formula of calculating the root-mean-square value of the pulse-width in the multi-mode optical fiber transmission line is introduced on the basis of quantitative analysis of the mode transmission effect in the multi-mode optical fiber. According to the effect of improving optical fiber transmission over the dispersion through mode transformation, several methods of compensating the fiber transmission line are discussed. For the pulse broadening the method of prestressing, the formation of the diameter of the longitudinal cross-section of fiber varying sinusoidally along its length, the method of the optical balancing and the method of the mode transformation device are proposed. (Paper received on 26 Apr 83 and finalized on 10 Nov 83)

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12949
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MINISTER SAYS SATELLITE PROJECT NOT CANCELLED

BK120230 Bangkok BANGKOK POST in English 12 Jul 85 p 21

[Text] The Government is awaiting private sector response to a plan for a satellite system which would be a joint venture between the government and private investors.

Communications Minister Samak Sunthorawet, commenting in his "Blue Corner" column in the DAILY MIRROR newspaper, said the project has not been cancelled as had been rumored recently.

He said authorities were looking forward to private sector participation in the project.

Among the private investors which the government would like to see participating in the project were those involved in international banking, television networks and telecommunications.

Mr Samak said the government had no plans of launching the project on its own, while its participation in a joint venture would not exceed 30 percent of the equity.

A special committee set up by the cabinet to study the viability of the project has summoned all government agencies concerned, including the military, to determine the government's need for a satellite, he said.

"While a study by a satellite manufacturer has indicated that Thailand must have at least six transponders for the project to be feasible, the government sectors existing requirement only amounts to 4.5 transponders," he said.

However, as it was believed that a satellite would benefit many in the private sector, the committee believed that the government should invest between 20 percent - 30 percent in a joint venture with private investors. The government could then instruct government agencies using Indonesia's Palapa satellite to switch to the Thai satellite, said Mr Samak.

He also said that there were various types of satellites which Thailand could invest in and they ranged from models similar to the Palapa with 24 transponders and a new satellite with 12 transponders.

The minister said that the satellite manufacturer, which conducted the feasibility study for Thailand free of charge, has recommended that it would be suitable to launch a 12-transponder satellite because the country's needs were expected to double from the present six transponders within the next seven to eight years.

However, it was noted that a new smaller satellite would cost more than a 24-transponder model.

Thailand has been offered a 24-transponder model because it would take less time to launch. The satellite is already available; it had earlier been sold to Indonesia but attempts to put it into orbit failed. It was later brought down by a United States space shuttle.

Mr Samak said the satellite now belonged to a group of insurance companies which has already compensated Indonesia.

CSO: 5500/4347

TOT GETS PURCHASE OFFER FROM ERICCSON

Bangkok THE NATION in English 17 Jul 85 p 19

[Text]

ERICSSON Telephone Corp has proposed a major "counter-purchase" deal to the Telephone Organization of Thailand if TOT should conclude a contract for planning and implementation of outside plant local telephone networks as part of the 5th telecommunications expansion plan set for 1984-1988, General Manager of Ericsson Telephone Corp for Thailand, Mr Supridi Sribhadung, told *The Nation* yesterday.

The proposal stipulates that for whatever amount that is used for import from Ericsson such as cables, network materials, tools, equipment, engineering services and management service will be matched by Swedish-based Ericsson through a counter-purchase of agricultural products from Thailand.

The proposal was contained in a letter signed by President of Ericsson Network Engineering Corp, which is part of the Ericsson Group, Mr Bjorn Linton, sent to Chairman of TOT, Gen Arthit Kamlang-ek.

The letter dated June 20 said that Ericsson will offer to undertake "major purchases" in tapioca should the Thai authorities consider such purchases preferable. Other products that could come under the deal proposed by Ericsson include: maize, rice, sugar, molasses, sorghum, palm oil, rubber, metals, ores, concentrates and tobacco, according to Linton's letter to Gen Arthit.

Supridi explained that the proposal was in line with TOT's expansion plan to install local networks to subscribers estimated to number about 1.8 million cable pairs for the targetted installation of one million switching lines for which orders have already been placed.

The overall expansion plan in this respect is a massive scheme involving total investment in the tune of about 20,000 million baht, Supridi said, adding that experience in other countries has shown that biddings for such large-scale projects could pose problems and that small companies with low overhead might clinch such deals but could well abandon the complicated and major contracts in the implementation process.

"In Malaysia, the same thing just happened recently," Supridi said.

The Ericsson Thailand's chief executive said that it would be vital for TOT to pre-qualify the bidders to ensure that only competent firms with adequate logistic support would be picked to enter the race.

Eighteen companies put up bids for the project and 15 were pre-qualified. But no decision has been reached so far after several months of delay.

"We therefore recently proposed that since we had earlier won the contract to install about 300,000 switching lines in a related scheme anyway, we could offer to take up part of the installation of the local networks. We estimated that 1.8 million local networks would be needed and we have suggested that we could easily handle one-fourth of the job in this respect based on a turnkey concept, with the installation of the switching lines and local networks being carried out at the same time," he said.

Supridi said that the letter of offer also mentioned that Ericsson understood that TOT would consider the counter-purchase proposal was an integral part of the financing for the project.

The Ericsson executive said that it would be difficult for TOT to seek financing through normal channels for such a large-scale plan "since a large amount of it would go to labour and international lending agencies usually don't offer loans for such purchases," he said.

Supridi said that the counter-purchase deal was put forward by Ericsson after TOT ran into financing problems for the massive telephone expansion project.

So far, he said, TOT has not officially responded to the offer although some top TOT officials have said they would take the matter into consideration.

CSO: 5500/4348

COMMUNICATIONS MINISTRY ON PURCHASE OF SATELLITE

BK120523 Bangkok THE NATION REVIEW in English 8 May 85 pp 1, 2

[Text] Thailand's hope of having its own communications satellite moved another step closer to reality yesterday when the Cabinet set up a working group to map out detailed plans within 45 days to set up a corporation with controlling interests in the hands of private investors to launch the ambitious scheme:

The Communications Ministry yesterday proposed to the Cabinet to purchase "Palapa B-2" from a consortium of insurance companies to kick off the ambitious plan to link up with the anticipated 250 ground stations, compared to the current 52 (equal to the number in Indonesia which has its own satellite).

According to the proposed formula, the company to operate Thailand's first satellite should have private investors own the majority interests while the government's equity holding should be the minority, estimated at about one-third of the total equity.

The government could lease out land or the telecommunications ground station at Khaelai Intersection, Nonthaburi of the Post and Telegraph Department and the ground satellite station at Siracha, Chon Buri of the Communications Authority of Thailand, adjusting the lease rates to the current levels, and converting the money into equity in the new company which may be between 30-40 percent of the total capital.

The recommendations had been drawn up by the U.S.-based Hughes Communications International Corporation which had initially submitted its feasibility study to the ministry last December. The company was told then to make an additional study into the proposal so that the new satellite system would cover all possible types available for the benefit of Thailand.

The study proposed that Thailand should use a medium-sized, instead of a small-sized, satellite to optimize the use and economize on costs.

The study said that the current 52 ground stations were to be expanded to 130 under current plans anyway. With its own satellite, Thailand will need about 250 ground stations. Adjustments will also be required to link the new satellite with the Khaelai and Siracha radio reception and satellite stations.

The Cabinet was told that the consortium of insurance firms which owns the satellite which could be sold to Thailand had set a deadline for the current price quotation and it is a matter of some urgency for the government to have to arrive at a decision very soon.

A six-member committee, chaired by Minister attached to the PM's [Prime Minister's] Office Suli Mahasanthana, was set up by the Cabinet at the ministry's recommendation to complete the detailed plans within 45 days. Other committee members include Communications Minister Samak Sunthorawet, Minister attached to the PM's Office Michai Ruchuphan, Deputy Finance Minister Suthi Singsane, Communications Permanent Secretary Choengchan Kamphy and adivser to the communications minister Phirapan Tungkhasawat.

Minister Samak said late last year that France, Italy, the U.S. and Sweden had expressed interest in assisting Thailanzte, to meet "Ramasat." He also said at the time that the U.S. Ex-Im Bank had offered a soft loan amounting to 85 percent of the project's cost, which is expected to amount to about 2,300 million baht if Thailand decided to purchase a U.S.-made satellite.

CSO: 5500/4347

SINGAPORE

REGIONAL INFORMATION NETWORK PLANNED

Kuala Lumpur BUSINESS TIMES in English 12 Jul 85 p 2

[Text]

SINGAPORE, July 11

SINGAPORE, already reputed as an international air and sea communications centre, plans to become a major information centre, a senior telecommunications official has said.

The official of the Telecommunication Authority of Singapore (TAS) said yesterday that tens of millions of dollars would be invested to develop a regional information network that "the world could plug into."

Franchise arrangement were being negotiated with at least five US, British and Japanese agencies to develop information technology in Singapore, he said.

Mr Ernest Wong, executive chairman of TAS' newly formed subsidiary, Intergrated Information Pte Ltd, said this would make Singapore an important information services centre in the world.

The services, which could be matched with those of the United States, Europe and Japan, would be available to the business community not only in the region but in other parts of the world, he said.

The speed of the centre's development would depend on how fast the market grew, he said.

Infrastructure work on the new telecommunication facilities is expected to begin by early 1987 when TAS starts trial runs of its telephone-television based public information system — Teleview.

TAS and the British electronic company Marconi reached a 50-50 agreement last May on the introduction of Teleview, which allows the user to call up and transmit information as photographic colour pages on a television screen.

Mr Wong said that integrated information would also be actively looking at local and foreign data bases for business applications, office automation and an electronic public access information system.

CSO: 5500/4344

BRIEFS

BROADCASTING QUALITY CONTROL--A source from the Radio and Television Broadcasting Control Board [RTBCB] told SIAM RAT that Deputy Prime Minister General Prachuap Suntharangkun, in his capacity as chairman of the RTBCB, appointed a subcommittee on 4 July 1985 to control the quality of radio and television programs. The source said that the appointment was an implementation of a cabinet decision on 15 January this year. According to the cabinet decision, some radio and television stations, including the programmers, organizers, and announcers, still produce programs that do not benefit the people. To implement the decision, the chairman of the RTBCB set up the subcommittee with Police First Lieutenant Chan Manuthan, minister attached to the prime minister's office, as its chairman; and Bang-Gen Musikaphong, secretary of the RTBCB, as its secretary. The subcommittee includes representatives from the RTBCB, the National Public Relations Committee, all television stations, and academicians. [Text] [Bangkok SIAM RAT in Thai 5 Jul 85 p 8

SISAKET FM RADIO STATION--Dani Siyaphai, director general of the Public Relations Department, this morning presided over the opening ceremony of Radio Thailand's FM station in Muang District, Sisaket Province. The FM station has a relay capacity of 1 kilowatt on 100.25 MHZ frequency. It started trial operation on 27 December 1984. It now broadcasts 17 hours per day from 0600 to 2300, using both the central and local dialects. It can be received in most areas of the province and nearby provinces. [Summary] [Bangkok Domestic Service in Thai 1300 GMT 10 May 85 BK]

TV STATION TO BEGIN TRIAL BROADCASTS--Television Channel 11 will begin trial broadcasts during the next three months, the Public Relations Department Chief Danai Siyaphai said yesterday. If the trials are successful the station will begin daily broadcasts from 5:30 a.m. until midnight. Although intended as an educational channel, commercials will be accepted but will be shown only at the beginning and end of programs. Mr Danai said the PRD had already spent about seven million baht on equipment and modifications to its Petchaburi station and it is expected that another 50 to 60 million baht will have to be invested. About half of the broadcasting time will be used to screen educational programs. [Text] [Bangkok BANGKOK POST in English 22 Jul 85 p 3 BK]

CSO: 5500/4347

BRIEFS

24 TRANSPONDERS FOR ANDEAN SATELLITE--Television signals will reach the most distant parts of Peru and the rest of the countries that comprise the Andean Group when the "Condor" satellite is launched into space around 1990, opening up an untold range of communication opportunities for the next 10 years to the governments of the subregion, especially for long-distance educational programs. That information was provided yesterday by Dr Angel Velasquez Abarca, chief of the international affairs office of the National Telecommunications Company of Peru (ENTELPERU) and present Andean coordinator, as he confirmed the preparations being made in this technological aspect of telecommunications. He said that our satellite will be similar to the "Arabsat" designed to facilitate the communications of the 22 Arab countries that will benefit from that project. That satellite was taken into space along with three others by NASA's shuttlecraft Discovery the day before yesterday and will be put into orbit today. Among the most prominent technical features of "Condor" are its transmission power, the highest of the approximately 100 communications satellites that are orbiting in space, 37 to 38 dbw, and consequently, with 24 transponders, said the Peruvian expert. The system will be completed with two command and control stations the locations of which have not yet been determined and the consultation and training program of the human resources that will administer and operate that system, the cost of which is estimated at approximately $260 million. While the preparations are underway, the five Cartagena Agreement member-countries together will lease an operational agreement of Intelsat until their own Andean satellite system is put into operation following the opening of international bids for the construction or purchase of the satellite that most suits the interests of the subregion, declared Doctor Velasquez. [Excerpts] [Lima EL COMERCIO in Spanish 19 Jun 85 p A-5] 8711

CSO: 5500/2088

ARGENTINA

ENTEL EXPANSION PLANS, IMPLEMENTATION REVIEWED

Buenos Aires SOMOS in Spanish 5 Jul 85 pp 6-9, 11

[Passages enclosed in slantlines printed in italics]

[Excerpts] Telephones for a Million

Participation by the private sector in the installation of 1 million new telephone lines (equivalent to the current shortage in the system) will be part of a plan that will cover:

In the first stage, the use of technology already installed in the country: the urban network (almost 30 percent in fair to poor condition) and interurban network. There is a demand for 1.5 million telephones that ENTEL [National Telecommunications Enterprise] cannot meet because it would require an investment of more than 30 times its budget.

The second part of the plan will cover the incorporation of advanced technology to the system through the use of other processes: video, video-image, signals, informatics, telematics, etc. To do this, the first stage must not only be completed but the /block program/ must also adopt a homogeneous technology.

Finally, in the medium term, /a domestic satellite/ will be used to more efficiently control communications from Argentina to the rest of the world and to distant parts of the country. The program does not ignore this possibility although the fulfillment of the first two stages is considered indispensable.

In the immediate future, the official aim is the installation of 1 million lines, an investment estimated at some $1.5 million. This stage will take /between 3 to 5 years/.

The impact that this investment will have will affect two sections:

The enterprises with installed technology in the country, capable of manufacturing the exchanges, will act as major suppliers of ENTEL and endorsers of current technology. There are three firms in this position now: Standard Electric (recently acquired by the Juncal group with minority participation by Siemens); Siemens-Equitel; and NEC [Nippon Electronic], associated with Perez Companc, currently finalizing installation of its plants in the country.

The thousands of suppliers of these major contractors could be divided into three groups: construction; exchanges (electronics and all the parts factories); and extension (manufacture of cables). To give an idea, a medium-sized exchange of some 10,000 lines has about 25 million parts and, inside, 10 kilometers of cables.

In a word, the /multiplying effect/ will be sizable in strained economic sectors that have idle capacity in their factories and very low levels of billing and are trapped by the general symptoms of the recession that paralyzed the market. The social sequel of fewer hours worked, unemployment, layoffs, dismissals and even plant closings will change.

What is the official program? Business circles state that, in the medium term, the result /would be to denationalize ENTEL/. However, no project in the immediate future could eliminate state participation due to its complexity. Looking at the program from two different perspectives can provide an idea of its make-up.

Customers: From this perspective, the plan proposes to acquire telephone lines for 1,500 or 2,000 australs, depending on what zone they are installed in. Are there 1.5 million customers interested in acquiring a telephone line? The requests recorded at ENTEL guarantee this. Can the customers pay the installation costs? The reality of the country leans toward a negative answer. An old plan that ENTEL has used for some years, called /"financial collaboration"/, will be used. It is a type of savings and loan, in this case for the telephone. Who will participate in the transaction? The customer who must make the payment, a bank that will act as collector and financer of the project and a business that, after closed bidding, will install the lines.

Private enterprises: They will have to answer ENTEL's calls for bids. The state enterprise will supervise the transaction, guaranteeing that institutional norms are met at real costs. The contractors will sell a /turn-key/ plant. This means ready for operation and with guaranteed /service/ in case of breakdowns. The plant will be administered by ENTEL which will tie it into the rest of the system.

If the experiment /ends/, the horizons opened to local industrial capacity can be projected toward other Latin American countries. The /turn-key/ sale of a telephone exchange to a neighboring country is coming in official plans. In this case, the state enterprise would act in association with private enterprise.

Plan Offered

Engineer Herbert Steffen, executive vice president and general director of the Siemens group in Argentina, explained to SOMOS the effects that the installation of 1 million telephone lines will have in the country. He revealed that the authorities will have a proposal drawn up by that German firm within 2 weeks.

[Question] Did Alfonsin talk to the businessmen about the telephone plans?

[Answer] The president announced to businessmen that the telephone sector in the country must be revitalized. Although I personally did not participate in those meetings, this was confirmed to me. We all know it because the president publicly announced that they will try to install about 1 million telephones. We were happy about the announcement and feel the responsibility of making a contribution.

[Question] What will that contribution be?

[Answer] We are working very hard drawing up a plan. It will take us about 2 weeks to finish it. The basic elements will be outlined. Once the ideas are drawn up, we will take it to the government to be approved and announced at the appropriate time. That is the general idea.

[Question] Will the incorporation of 1 million telephone lines mean a technological leap for the country?

[Answer] The technological leap has already been taken. The first steps were taken in the 1979-80 bidding when international enterprises were invited to participate in the communications sector in the country. I believe that eight enterprises including Standard Electric and Siemens-Equitel came. In that competition the authorities chose NEC to install a third factory in Argentina. This is in progress so we have three factories here to take care of the telephone system. There is sufficient capacity to install 1 million lines in a term of about 5 years. "Digital" or electronic technology was required in the bidding. Standard Electric, Siemens-Equitel and NEC, which is associated with Perez Companc, were hired and required to use that technology in the country. Siemens-Equitel already made the respective investments, Standard Electric is making them now and we know NEC is also. This million new telephones will probably be installed using digital technology.

[Question] What is the base cost to install a line?

[Answer] Our figures range between 1,500 to 2,000 australs.

[Question] How is that base figure of 1,500 to 2,000 australs per telephone line estimated?

[Answer] The exchange equipment would be about one-third. The rest is building and outside installation, cables, assembly work and starting the system.

[Question] Will the system chosen be financial collaboration?

[Answer] That has many facets. Considered in isolation, in a small town where you start from scratch, it is very different from financial collaboration in an area like Cordoba or any part of Greater Buenos Aires. This is the type of problem we are analyzing in order to solve it in the plan we are drawing up. I cannot say if the plan will have a financial collaboration system but I can state that the second part of the plan will entail joint work with ENTEL.

[Question] Will this technological incorporation also mean using domestic satellites?

[Answer] The satellite is a system to communicate with other countries or distant systems. The satellite system can be considered separately from the regular telephone system. Without question, Argentina will have to turn to the satellite system in the medium term. For now, the plan covers the public system with two main divisions: urban and interurban.

7717
CSO: 5500/2090

BERMUDA

OPPOSITION HITS BROADCAST POLICY, CALLS FOR RESIGNATIONS

PLP Protest

Hamilton THE ROYAL GAZETTE in English 2 Jul 85 pp 1, 6

[Text]

Opposition Leader Mrs. Lois Browne Evans yesterday called for the resignation of all broadcasting commissioners and complained they had failed to enforce political regulations.

She said the Progressive Labour Party would now lodge a formal protest over *Radio VSB's* refusal to air free political programmes during the final weeks of the Pembroke West by-election.

Mrs. Browne Evans said: "The negligence of the Broadcasting Commissioners on the matter of enforcing Political Broadcasting Directions, and ensuring the health of Bermuda's broadcasting industry in general, has been so gross, that we feel that few would disagree that all the Broadcasting Commissioners should join their chairman in resigning from their positions."

Broadcasting Commission chairman Dr. Stanley Ratteray resigned last week but a permanent replacement for the post has not yet been appointed. Minister of Community and Cultural Affairs, Industry, and Technology, Senator the Hon. Gerald Simons, confirmed last night that Dr. Ratteray had submitted his resignation "for personal reasons". He said that deputy chairman of the Commission Mr. Lawson Mapp would fill the position temporarily.

However, when contacted by *The Royal Gazette* last night, Mr. Mapp declared that he had "not heard a squeak" from Cabinet about the job shuffle.

"I haven't been asked to fill the position," Mr. Mapp said. "No-one has contacted me about what's going on."

Mrs. Browne-Evans told a news conference: "Such a sensitive matter as the right of the public to hear political views during election periods should not be left to a blatantly partisan body whose membership includes UBP election candidates and former party national or branch chairmen.

"The time has come for the Broadcasting Commissioners to be restructured along the lines of the Electoral Boundaries Commission, which has bipartisan membership, and does not suffer so much from the taint of political partisanship.

"The time has come for Government, through both its apethetic Minister of Industry and Technology, and its hitherto impotent Broadcasting Commissioners, to take a leadership role in restoring the health of Bermuda's broadcasting and television industry.

"Government's mismanagement of the situation has led to an abysmal void of educational, cultural and community service programming, and the public has been the big loser."

She said the PLP deplored the consistent pattern of wilful negligence by Government in failing to enforce powers under broadcasting laws, which had lead to an erosion of Bermuda's right to a free flow of information over the air waves.

She said the general public was now being denied the chance to hear the unfiltered views of various political parties and candidates during an election period.

She added: "At the time of the initial controversy surrounding this matter, during last year's Pembroke West by-election campaign, both the Broadcasting Commissioners and the Attorney General actively undermined the spirit of the Political Broadcasting Directions."

She said one broadcasting company had insisted it was merely objecting to being forced to air political broadcasts free of charge during the two-week period between nomination and polling days during a by-election.

She said the PLP would protest to the Broadcasting Commissioners, Government and the Attorney General seeking a ruling on the decision, as well as investigating the legality of the ban.

Party chairman Mr. Alex Scott said: "Youngsters who are being told to follow rules and regulations are being set a bad example.

"We are asking people to remember this flouting of the rules and vote accordingly on July 11."

"At the time the Progressive Labour Party warned that the rights of the public to hear the views of election candidates should not be subject to the whims of any individual station manager, and that any undermining of the Broadcasting Directions' intent would only be the thin end of the wedge.

"Time has proven this to be true, with broadcasting stations now refusing to carry any such broadcasts."

Further Criticism

Hamilton THE ROYAL GAZETTE in English 4 Jul 85 p 1

[Text] Progressive Labour Party Senator David Allen yesterday hit out at the Government and the Attorney General for "ignoring regulations at a high level" and their interpretation of the law concerning free political broadcasting.

Senator Allen was commenting in the Senate yesterday following the refusal of the radio stations to air free political advertising.

And he also called for the reconstitution of the Broadcasting Commission as a bipartisan body.

He said in the Senate he had met with Attorney General Mr. Saul Froomkin a year ago to ask him about the regulation that says politicians "shall" be allowed free advertising.

"I was told at times in law 'shall' means 'may' and 'may' means 'shall'," he said.

"Government is ignoring regulations at a high level over the Broadcasting Commissioners and the political broadcasting furore," he said.

The Minister responsible for Telecommunications, Senator the Hon. Gerald Simons, replied that the Broadcasting Commission was not disorganised and that they had met to discuss the free advertising issue and would be making a decision soon.

Sen. Simons said he had kept out of the dispute because it would not have been appropriate to get involved in view of his "recent political activity". Sen. Simons ran unsuccessfully in the UBP primary for the Pembroke West by-election.

In a press release issued yesterday, he said Mr. Froomkin had determined that there is no provision in the Political Broadcasting Directions which can compel a broadcast station to air political advertisements.

When asked to comment on the PLP's call for the resignation of all the Commissioners, he said: "I have no comment on that. What can I say?"

Yesterday, Broadcasting Commission deputy chairman Mr. Lawson Mapp said he knew he automatically took over if the chairman resigned, but he said he did not have official word Dr. Stanley Ratteray had resigned until yesterday.

Senator Simons said: "There was a meeting with the 11 members of the commission last Thursday and if Mr. Mapp had attended he would have known Dr. Ratteray had resigned."

When asked why he resigned, Dr. Ratteray said yesterday: "I have no comment to make other than I resigned for personal reasons. I have nothing further to say."

CSO: 3298/890

BRAZIL

MINISTER REFUTES CHARGES ON COMMUNICATIONS POLICY

PY082254 Brasilia Domestic Service in Portuguese 2200 GMT 6 Aug 85

[From the congressional report]

[Excerpts] Today the Chamber of Deputies questioned Communications Minister Antonio Carlos Magalhaes. The minister referred to the reconsideration of the issuance of operating licenses to radio and television stations and outlined policies to be implemented by his ministry. The minister was questioned by Deputies Cristina Tavares and Jose Eudes. The minister said the large number of operating licenses granted to radio and television stations at the end of the previous government suggested the possibility that some requests may have been granted at the expense of others that had been submitted earlier. Earlier requests are legally entitled to receive earlier consideration.

In this regard, the minister gave figures and cited some cases in which the party receiving the operating license was unknown to the social sectors in its community, despite the fact that all the required legal steps had been taken. In other cases, in which all the legal proceedings were also complied with, problems arose regarding the technical capacity of the parties receiving the permits. Finally, two or more licenses were granted to the same people or group during a short time span -- from 1 October 1984 to 15 March 1985.

In sum, Magalhaes said, the administrative procedure itself was ultimately criticized. Questions were raised not only about the number of licenses offered and the speed with which some of them were issued, but also and especially about the fact that the decision was not left to the government that was about to be inaugurated.

Upon announcing that a report on this matter has been submitted to President Jose Sarney, Magalhaes said a draft decree amending the radio-broadcasting regulations has been prepared. The draft decree contains specific provisions concerning procedures for the issuance of concessions, and licenses for the installation of radio and television stations.

Magalhaes also pointed to difficulties that have been disrupting the normal expansion of Brazilian communications facilities. He said that these difficulties could seriously affect the Brazilian communications structure in the near future. He also mentioned the damage caused to the resources of the National Telecommunications Fund [FNT] since 1975. Magalhaes said that since 1975, the surcharge earmarked for the FNT -- within the framework of the National Development Fund -- has been allotted to other governmental sectors, thus distorting the basic objective of this surcharge and

provoking justified anger among customers, many of whom had gone to court to demand that payment of this surcharge -- which they regard as illegal -- be discontinued. Magalhaes expressed concern over an unrealistic policy that has kept adjustment rates for consecutive years below the inflation rate. He said this is preventing investments from yielding adequate profits to meet the actual expansion needs.

After noting that meager budget resources have been alloted to Brazilian Telecommunications, Inc., [Telebras], Magalhaes said the quality and dependability of Telebras services in beginning to show signs of deterioration.

Deputy Christian Tavares said Magalhaes' exposition appeared more like a statement of intent and the new Republic, if it does not want to remain just a rhetorical figure, should implement concrete changes. She added that no rhetoric should be used especially with regard to technological know-how, which will play a basic role in promoting the country's independence. In fact, she said, those enterprises that are involved in telecommunications activities are not Brazilian, for example, Ericsson and Siemens. Meanwhile, she charged, technology developed by our engineers is put aside. Tavares also said those officials who had used their influence to obtain concessions for their benefit have kept their jobs. He mentioned the case of Communications Ministry Secretary General Romulo Furtado, who is now ironically in charge of rescinding those concessions.

Magalhaes denied Tavares' allegations by saying there have been concrete changes in the communications field. It will suffice to say, he said, that up to 1975, all suppliers of equipment for Telebras were foreing companies and today, only 28 percent of these suppliers are not Brazilian companies.

Regarding his aides, Magalhaes said that both Neves and Sarney approved their appointments and all of them are highly competent individuals.

Deputy Jose Eudes said that Magalhaes' statements suggest tha t the communications policy of previous governments was correct and that this government is simply continuing this policy. He added that the minister failed to explian why television networks lease channels at privileged prices to the detriment of other groups. He also charged that the Brazilian telecommunications system is controlled by representatives of large multinational companies that have been granted exclusive marketing rights through Communications Ministry decrees. Eudes mentioned an agreement that was reportedly made in New York between the Japanese group NEC and businessman Mario Garnero for the purpose of obtaining this reserve.

Magalhaes said he has never met with representatives of the above groups and that he found the Communications Ministry policy to be technically sound but socially unjust.

Deputy Adail Ventorazzo expressed concern for the cancellation of licenses granted by the previous government and asked Magalhaes about the reasons for this action.

Magalhaes said the main reason for these cancellations was the large number of licenses issued at the end of the Figueriedo administration, but made it clear that each case is being considered separately.

CSO: 5500/2096

JPRS-TTP-85-021
4 September 1985

SEI PREDICTS 25 PERCENT GROWTH IN INFORMATICS IN 1985

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 17 Jul 85 p 23

[Text] Special Secretary for Informatics Jose Rubem Doria Porto predicted yesterday, in Porto Alegre, that the national informatics industry will probably grow this year at the same rate as last year--about 25 percent--, and said that, although this is not one of the objectives of national informatics policy, the country is entering the international market for this sector. "Exports, which were very low last year, are going to grow considerably this year," he said. But he preferred not to cite figures. He confirmed that those who buy from Brazil are not only its neighbors in Latin America, but "even the United States."

Doria Porto revealed that the National Council of Informatics (CONIN), at its next meeting--not yet scheduled--will discuss the creation of a system of incentives for the development of the microelectronic industry in Brazil. According to him, Brazil imports each year, at FOB prices, from US$150 million to $200 million worth of sophisticated components for its informatics industry. These components wind up at their final destination costing two and a half times their original cost. "Thus," said the Secretary, "there is a demand for microelectronic components of about US$500 million." This value is equal to 25 percent of the billings of the industry last year, or US$ 2 billion.

"So", asked the Secretary, "how can they say that there is no place for domestic production of these components?" Doria Pinto said that the intention of the members of CONIN is to devote to microelectronics "all possible incentives", but he didn't want to specify what mechanisms would be used. He admitted that the new policy for microelectronics, even though it lacks the approval of the National Congress, could be instituted now, through a "transitional decision" by President Sarney.

"Within 60 days," added Doria Porto," the commission that studies the regulation of the Informatics Law should have concluded its review of a discount of up to 1 percent of income tax level for individuals who invest in the purchase of shares in informatics companies." In his opinion, this is the only type of incentive necessary for what is needed just to be capitalized in order to continue investing. "The same does not happen with the components industry, he explained, because it demands huge investments and sophisticated technology."

12857
CSO: 5500/2091

DECREE TRANSFERS POWERS ON INFORMATICS TO S&T MINISTRY

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 17 Jul 85 p 23

[Text] President Jose Sarney signed a decree, already published in the DIARIO OFFICIAL, which vacated the National Council of Informatics (CONIN). Some sectors of the governmnet are concerned about his attitude in this regard and believe that Minister of Science and Technology Renato Archer committed a grave political error in submitting the bill to the President.

The first sign of CONIN's reduction is the cancellation of the schedule of its periodic meetings. In principal, as stipulated by the Informatics Law, CONIN should hold meetings every sixty days. With the new decree, they will meet only twice a year, with no definition of the interval between meetings. The decree also changes the conditions under which regular meetings, which up until now, by law, could be called by any one of its 26 members, can now be convened. Now, only the country's President (or a committee of the Ministry of Science and Technology) can create special meetings.

But what critics of the measure consider most serious is that the Minister of Science and Technology is now empowered to nullify provisional instructions concerning the National Plan for Informatics. This plan should be sent to Congress by October, but no deadline has been established for its approval.

The decree, signed on the 12th of June, and designated No. 91,433, is illegal, say its critics, since it is based upon the decree which created the Ministry of Science and Technology, on 15 March. This latter is considered unconstitutional because it transfers to the new Ministry the responsibility for CONIN, which, according to the Informatics Law, is a sovereign entity which provides advice to the President of the Republic.

CONIN members were surprised by the decree of July and were preparing a proposal for internal regulation for CONIN which was to have been presented at the meeting scheduled for today. The government sectors that are concerned about the measure signed by the President think that the decree represents a show of force by the Special Secretary for Informatics--SEI. These government members believe, actually, that the Secretary wants to reinstitute the system of the previous government, with a direct tie to the President of the Republic, and with no provision for debate or criticism of his suggestions, which was possible through CONIN.

The new president of the Brazilian Association of the Computer and Peripherals Industries (Abicomp), Luiz Antonio Mesquita, said yesterday that the decree signed last Friday by President Jose Sarney which re-assigns all decision powers with regard to Brazilian informatics until Congress approves the First National Plan for Informatics, "closes a gap which was causing insecurity for the businessman in this sector, and makes CONIN's role more viable, since it won't feel blamed for the paralysis in informatics in Brazil."

According to Mesquita, the decree is "operational in character," and its main virtue is that it eliminates the climate of lack of definition which threatened the informatics sector, while awaiting approval of the National Plan by the Congress. "I imagine that the plan will only be voted upon in the legislative session of 1986. With this decree, the President has clarified things until that happens," said Mesquita.

The President of Abicomp praised the decision by Sarney to reduce the number of required meetings of CONIN; previously, it was required that they be held every two months, but the new decree calls for only two regular CONIN meetings per year. "This makes the functioning of CONIN more flexible, since during slow periods they will not feel themselves obliged to meet as often," said Mesquita.

The vice-president of Labo Eletronica, Marco Antonio Filippi, also considered the intervention of the President to be "positive"; it will bring about a "calming of emotions until Planin is voted upon by the Congress." Filippi feels that the policy for informatics was already "amply debated last year" and he sees no reason to return to the discussion now. "generating uncertainty in industry." This statement by Filippi refers to the climate created in the Congress, with maneuvers of some congressmen against official policy for the sector.

The President of Gradiente, Eugenio Staub, described as positive and "correct" the fact that, with the new presidential decree, the next meeting of CONIN was postponed. "The time frames for the correct definition of a national policy for informatics were really very short," he said. Nevertheless, Staub feels that two meetings per year for CONIN is "very few."

He considers Sarney's decision to assume control of decisions regarding informatics to be natural, but he has some reservations: "The desire of the business sector to participate in the elaboration of policy has been frustrated, since I see in this decision a certain diminution of CONIN," he criticized.

12857
CSO: 5500/2091

BRAZIL

BRIEFS

SATELLITE, DATA PROCESSING DEVELOPMENTS--The Telebras [Brazilian Telecommunications, Inc] Program for satellite communications is currently completing an important technological stage through the development of land stations and reception transmission parabolic antennas based on the utilization of equipment that is already available in the international market. Coordinated by its Research and Development Center (CPQD), and after having completed the development of basic land-based equipment for the satisfactory operation of the National Telecommunications System, Telebras has started to work on original advanced technology to be basically applied to data communications. Data communications consist of the linking of computer terminals to data banks, and they are used in financial institutions. This type of communications is still being handled with conventional technology. According to the researchers involved, the objective now is to develop a flexible advanced technology to serve the consumer market at reasonable prices. This technology is known by the name AMDT (Multiple Access by Divided Time), and the corresponding equipment is expected to be available by the end of 1988. [Excerpt] [Sao Paulo FOLHA DE SAO PAULO in Portuguese 3 Aug 85 p 22]

CSO: 5400/2083

FORMER ABC COLOR HEAD ZUCCOLILLO ON PRESS FREEDOM

PY100139 Paris AFP in Spanish 0424 GMT 9 Aug 85

[Text] Asuncion, 8 Aug (AFP) -- Aldo Zuccolillo, director of the Paraguayan newspaper ABC COLOR, which was closed down by the government, today told AFP that his independent stance remains unchanged, that his newspaper should be allowed to reopen, and that there should be press freedom. Zuccolillo made these remarks on the 18th anniversary of his newspaper.

The anniversary was marked by a mass at metropolitan cathedral, during which the events that led to the closure of the paper 17 months ago by President Alfredo Stroessner's regime, were recalled. The mass was held under police surveillance, and police personnel took positions inside the cathedral.

Zuccolillo emphasized: We are still awaiting the lifting of this unconstitutional and unjustified measure, but if ABC COLOR must die this way, it will go proudly without giving up any of its freedom and independence. He also explained that for the time being the government has not shown any indication that it seeks rapprochement and it has shown even less inclination toward dialogue.

CSO: 5500/2099

PARAGUAY

RADIO NANDUTI CLOSED FOR 'ADVOCATING SUBVERSION'

PY100335 Madrid EFE in Spanish 0229 GMT 9 Aug 85

[Text] Asuncion, 9 Aug (AFP) -- The Paraguayan Government today issued a resolution closing down Radio Nanduti, one of the most popular stations in the country, for advocating subversion.

The action is temporary and will go into effect at midnight. Both AM and FM frequencies will be out, according to a resolution by the National Telecommunications Administration (ANTELCO) signed by its director, Colonel Francisco Feliciano Duarte.

ANTELCO justified Nanduti's closure by claiming that the station advocates subversion, sows confusion, and casts doubts on people's honor and institutions' credibility.

The resolution added that Radio Nanduti's broadcasts induce a state of latent moral violence and awaken aggressiveness, thereby putting the station on a collision course with the basic principles of public peace and order.

Furthermore, ANTELCO claimed that no Paraguayan radio station can advocate disobedience of the laws.

Humberto Rubin, owner-director of Radio Nanduti, refuted ANTELCO's charges and said the measure is outrageous and unfair. We do not engage in subversion. Ours is a radio station that maintains permanent and solidary links with the people, Rubin told EFE.

Perhaps we are being punished for doing things for the people. Our job is journalism and we imperil ourselves every day in the name of decency as our own policy, Rubin added.

Rubin also told EFE that after the 10-day suspension, his radio station will return to to the air and continue as before.

Nanduti was closed for 1 month in 1983 on government orders, and Rubin himself was suspended as an announcer on the grounds that he did not have the appropriate license.

CSO: 5500/2099

PARAGUAY

NANDUTI HEAD VIEWS LACK OF SUPPORT OVER CLOSURE

PY151414 Paris AFP in Spanish 0202 GMT 13 Aug 85

[Text] Asuncion, 12 Aug (AFP) -- Humberto Rubin, director of the suspended Radio Nanduti, today expressed sorrow over his isolation and abandonment by local and international news media, which did not react to what he considers an attack by the Paraguayan Government.

I feel abandoned and I am certain that when we go back on the air, not many days will pass before the radio is permanently closed, the well-known radio reporter sadly told AFP. He said he was disappointed over the silence of the press media, which so far has not offered him any space in which to explain his position on the measure adopted.

The National Telecommunications Administration [Antelco] on 9 August forwarded to Rubin a resolution issued by the Antelco Council accusing the radio station and its reporters of advocating subversion and confusion, in addition to casting doubts on the honor of individuals and the credibility of institutions.

A Nanduti lawyer today presented a request for reconsideration of the resolution closing the station for 10 days, demanding evidence that it has in fact advocated subversion and confusion among the people. He also asked for the renewal of Rubin's radio announcer's license, which was revoked 2 years ago.

He added that permanent closure of the station is imminent because there is no clear basis for temporary closure.

He said the logical thing to do in view of the serious accusation by Antelco would have been to file suit against the station in the courts, so that we could defend ourselves. But with this unconstitutional closure, we have no right at all.

Regarding the silence of his colleagues from both the radio and the press, Rubin stated: It is dreadful. I never expected silence regarding a problem that should interest everyone, because it is not only Radio Nanduti that is being closed but a communications medium, and any of the other stations could face this situation.

He added that due to the little or no reporting on the closure of the station, almost no one knows what they have done to us, and people call us thinking that we are only having technical problems.

In Argentina, the people are not yet aware of the closure, although I have already received many expressions of solidarity from Europe, he added.

Rubin added that at the local level only the Catholic Radio Charitas has responded to the situation and granted some airtime for his programs; and that the Journalists Union, the Inter-Union Movement workers, and some unrecognized opposition parties have issued communiques expressing solidarity.

CSO: 5500/2099

PARAGUAY

SPP COMMUNIQUE SUPPORTS RADIO NANDUTI WORKERS

PY131902 Asuncion HOY in Spanish 11 Aug 85 p 7

[Text] In the wake of a resolution ordering a 10-day closure of Radio Nanduti, the Journalists Union of Paraguay [SPP] has voiced its solidarity with Radio Nanduti workers, who are again suffering the consequences of an official suspension, as they did in 1983.

An SPP communique states: "We express our solidarity with our fellow workers of Radio Nanduti who are again going through times of anxiety and uncertainty because of a 10-day suspension of the source of their livelihood, a suspension ordered by the National Administration for Telecommunications. The communique adds: "It may be recalled that in 1983 a similar step was taken against that radio station for 1 month. As was the case in 1983, the current suspension is based on an alleged 'incitement to subversion and disturbances...' by Radio Nanduti, an opinion we do not share because we consider it out of place."

Times of Tension

"Radio Nanduti fellow workers: We can imagine the times of tension you are going through after being temporarily deprived of your livelihood, especially during these times of economic crisis. You may rest assured that, from their respective jobs and in the course of their daily struggle to earn a living, the other members of the journalists trade union are not insensitive to this new arbitrary action," the communique adds.

In addition, the communique expresses solidarity with Radio Nanduti Director Humberto Rubin, the principal target of the censorship adopted against his enterprise for exercising freedom of the press." [quotation marks as published] In conclusion, the SPP expresses its willingness to undertake any solidarity action that the Radio Nanduti fellow workers demand.

CSO: 5500/2099

BRIEFS

USE OF ARABSAT DELAYED--Bahrain is still no nearer knowing when it will be able to start taking advantage of ARABSAT. Final tests still have to be carried out on the Arab satellite before it can start transmitting sources at Bahrain Telecommunications Company said. Bahrain was the first of 22 Arab League countries to be ready with its ARABSAT earth station at Ras Abu Jarjur last October. But Bahrain Telecommunications Company said there has been no confirmation of when the satellite would start providing the island with planned telephone, telex, television and radio transmissions. [Text] [Manama GULF DAILY NEWS in English 25 Jul 85 GF]

CSO: 5500/4511

BRIEFS

STATEMENT ON INFORMATION--United Nations, June 22--Bangladesh recently regretted at the UN that the flow of information between developed and developing nations continues to suffer from inequity and imbalance, a Foreign Office Press release said, reports BSS. Bangladesh Permanent Representative to the UN, Ambassador Khwaja Wasiuddin, in a statement in the committee on information, said the inequity and imbalance in the news flow as despite the repeated calls for a new international information and communication order. He suggested that the disparity between the developed and the developing countries in the field of communication should be corrected by expanding infrastructure of the developing countries, development of modern information technology and improvement of information. [Text] [Dhaka THE BANGLADESH TIMES in English 23 Jun 85 p 4]

NEW EXCHANGE INAUGURATED--Magura, June 24--Home Minister Maj Gen Abdul Mannan Siddiky today emphasised the need for improved telecommunication system for overall progress of the nation, reports BSS. Inaugurating a 400-line automatic telephone exchange the Minister said the installation of the exchange manifested the policies of the government to flourish economic and other development activities at the district and upazila levels through modern means of communication. Gen Siddiky pointed out that Bangladesh T and T Board had already brought 451 upazilas out of 460 under its telecommuncation network. He said despite resource constraints and lack of technology, Bangladesh had been maintaining direct tele-link with 120 countries of the world. The Minister pointed out that 26 districts have been brought under nationwide subscribers dialing (NWD) and the remaining districts would be brought under it in phases. Gen Siddiky said at present there were one lakh eighty thousand telephones and 1400 telex lines in the country. This would be made double by the next five years, he added. [Text] [Dhaka THE BANGLADESH TIMES in English 25 Jun 85 p 1]

CSO: 5550/0138

BRIEFS

UNIT TO MONITOR NEIGHBORING BROADCASTS--The government has decided to set up a cell to monitor the propaganda coming from across the country's border over radio and television. The cell will devise appropriate material for countering the foreign propaganda and will also make arrangements for disseminating suitable material in border areas. The information and broadcasting minister, Mr V.N. Gadgil, said this in the Lok Sabha. [Text] [Delhi Domestic Service in English 5 Aug 85]

NEW RADIO SERVICES PLANNED--All India Radio proposes to set up a commercial service for Gulf countries and strengthen its external broadcasting service during the Seventh Plan Period. Stating this in a written reply in the RAJYA SABHA, Information and Broadcasting Minister Gadgil said the commercial service will have two shortwave transmitters of 250 kw each. He said a scheme to set up two or more 250 kw shortwave transmitters at Delhi and another two 500 kw shortwave transmitters at Bangalore is going on which is expected to be completed by 1986-87. [Text] [Delhi ISI Diplomatic Information Service in English 1520 GMT 26 Jul 85 BK]

CSO: 5500/4741

QATAR

QNA, KOREAN NEWS AGENCY EXCHANGE SERVICES

GF161600 Manama WAKH in Arabic 1450 GMT 16 Jul 85

[Text] Doha, 16 July (WAKH)--An international line for duplex exchange of news between QNA and the South Korean YONHAP News Agency started operation today as part of the agreement for cooperation and exchange of news signed between the two agencies on 21 April 1984.

QNA Director 'Ali ibn Sa'id Al-Kuwari has sent a message on this occasion to (Chong Chong-Chik), chairman of the South Korean YONHAP News Agency in which he affirmed that the opening of this line reflects the common wish to consolidate bilateral relations. He added that the new line will allow the transmission of the QNA international news bulletin in English to South Korea. He expressed hope that this service will cover the local, regional and international events.

In a similar message sent by him on this occasion, the chairman of the South Korean news agency said that the exchange of information between the two agencies will achieve satisfactory results in developing cultural consciousness and in supporting cooperation in the economic, scientific, and technical fields and friendship between the two countries. He said the entry of the two countries into the era of direct communciations between Doha and Seoul via two satellites will contribute to the consolidation of Arab-Korean friendship.

An international line was operated at the beginning of this month to transmit QNA news to the Belgian capital as part of the expansion in the international network of QNA.

CSO: 5500/4511

SENEGAL

APS, AZAP SIGN COOPERATION AGREEMENT

AB131820 Dakar Domestic Service in French 1300 GMT 13 Aug 85

[Excerpts] In order to achieve a better circulation of information between developing countries, the SENEGALESE PRESS AGENCY [APS] and the ZAIRIAN PRESS AGENCY [AZAP] signed a cooperation agreement this morning. The agreement was signed by the heads of the two agencies. Sule Ndiaye was a witness to this:

[Begin Ndiaye report] News items transmitted by APS will be considered by AZAP as a reliable firsthand source of information coming from Senegal and, similarly, AZAP dispatches will be given equal respect, discernment, and consideration. This is somewhat the practical appraisal that should be made of the ceremony which took place this morning at the conference hall of APS. The director general of APS, Amadou Diop, first of all placed this cooperation agreement between the two agencies in its true context, that is of the bilateral cooperation between the two countries. Mr Diop, therefore, described the ceremony as a logical outcome of the Zaire-Senegal Joint Commission. According to the APS director, this agreement is the expression of the quality of relations between the two heads of state. A favorable pivot of cooperation has, therefore, been acquired, concluded Mr Diop.

The agreement which has just been signed between Senegal and Zaire is a step toward the restoration of the new information order and is a partial fulfillment of the preoccupation of the PAN-AFRICAN NEWS AGENCY, PANA, and especially that of the Nonaligned pool. In short, it is the battle for information which has been initiated.

CSO: 5500/181

SENEGAL

BRIEFS

TELECOMMUNICATIONS SCHOOL FOR AFRICA--Dakar, 2 Aug (PANA)--The Seneglaese minister of information and telecommunications, Mr Djibo Ka, today in Dakar laid the foundation stone for the construction of a regional institute of telecommunications for west and central African states. The institute, whose work began in June this year will receive trainees from Benin, Burkina Faso, Mali, Mauritania, Niger, Central African Republic, Senegal and Togo and will have the capacity to receive 64 students for each 2-year intake. Entrance to the institute will require 2 successful years of university, education in such subjects as chemistry, physics and mathematics. The construction works of the institute are expected to last until June 1986. /Text/ /Dakar PANA in English 1346 GMT 2 Aug 85/

CSO: 5500/179

SOUTH AFRICA

BRIEFS

SATELLITE TV--Within a year satellite communication will bring high-quality television reception to regions of South Africa, such as Walvis Bay and Ubombo, which have either been without it entirely or whose signal has been poor. This will result from a R4m contract awarded by the SABC to PNI Electronics (part of the Protea group) for the supply of ground equipment for a permanent satellite link. The equipment will be manufactured by U.S.-based Scientific Atalanta. SABC has already leased a transponder (combined receiver and transmitter) aboard an Intelsat communication satellite in geosynchronous orbit 36,000 km above Earth. This gives it the ability to broadcast one TV channel and six radio channels. While the radio channels give the SABC the ability to be heard anywhere in Africa, the TV channel requires special ground equipment for onward transmission. The conventional PAL signal of TV1 will be changed to a form called B-MAC (for multiplexed analogue components) before being transmitted to the satellite via a dish aerial. The satellite will return the signal to 20 decoding satellite receivers that will be placed strategically around SA. The signal will then be reconverted to PAL for transmission by local area transmitters. According to PNI Electronics MD Peter Verwer, satellite communication is by far the most cost-effective method of distributing TV transmissions and it may also prove to be so for radio broadcasts. [Text] [Johannesburg BUSINESS DAY in English 6 Aug 85 p 9]

SABC-PNI ELECTRONICS CONTRACT--A major step in South Africa's commercial communications was taken last week when the SABC awarded a R4 million contract to PNI Electronics for satellite transmission equipment for radio and TV. Scientific Atalanta of the United States will make the ground equipment and SABC has leased a transponder on Intelsat, one of the latest satellites used in international communications. Signing the contract were (from left): Mr Deon Conradie, controlling engineer, transmitters, SABC; Mr Peter Verwer, MD, PNI Electronics; Mr Trevor Grundling, divisional manager, PNI; seated: Mr Jack Acker, GM, Satellite Communications International, Scientific Atalanta; Mr Neel Smuts GM, transmitters, SABC; and Mr Forrest McKinney, programme control manager, Scientific Atalanta. [Photo not copied] [Text] [Johannesburg THE STAR in English 5 Aug 85 p 16]

CSO: 5500/182

USSR

ESTONIA RECEIVES FIRST MOBILE SOUND-RECORDING STATION

Tallinn SOVETSKAYA ESTONIYA in Russian 12 May 85 p 3

[Article by M. Yukki: "Radio Center's Innovation"]

[Text] It was only quite recently that Tallinners first saw this motor vehicle, when one day in May it drove to its first assignment: a stereophonic recording of a concert in the Estonia Theater hall.

"What will radio listeners gain from the commissioning of the new wheeled on-location sound-recording station?"

The answer to this question was given by Kaupo Varandi, deputy director of the Republican Radio and Television Center:

I will describe briefly our new acquisition from Bratislava, Czechoslovakia. This vehicle is new in every sense: it comes from the first series of such stations built by the Tesla-Elektroakustika plant, and we are pleased that one of the ten vehicles has arrived in our republic.

The station's equipment can be classified as the fourth generation of this kind of hardware. Sound is recorded by a new technology employing integrated circuits. The vehicle is equipped with new Hungarian-made stereo tape recorders and with 36 microphones (previous mobile stations had only twenty-four).

Careful consideration was given to working conditions. It is no longer necessary to unwind the 100-meter cable manually, and there is a special electric motor for this. The cabin is well-equiped to serve as a work station for an announcer or reporter.

As for a direct answer to your question, one can say that for the radio listeners the introduction of the new technology means, in the first place, better quality of radio reporting and stereophonic transmissions from locations lacking stationary sound-recording equipment.

PHOTO CAPTIONS

1. New on-location sound-recording station.

2. Krista Kil'vet, Estonian Radio stereo broadcasting editor, and Reyn Palo, senior electrician of the Republic Radio and Television Center, at the recording panel. [Photos not reproduced]

9681
CSO: 5500/1023

FRANCE, FRG SELECT COMMON DBS STANDARD

Paris AFP SCIENCES in French 4 Jul 85 p 35

[Article: "France and the FRG Select the "D2 Mac Paquets" Standard for Their Television Satellites"]

[Text] Paris--On 28 June in Paris, the French minister of Post and Telecommunications, Mr Louis Mexandeau, and his German counterpart, Mr Christian Schwartz-Silling, officially announced that the future direct TV satellites of the two countries would use the new color TV process "D2 Mac Paquets" for their broadcasts--as soon as they are placed in service.

This new standard--which will replace the "Pal" or "Secam" standards on TDF-1 and on the German TV-Sat satellites which, it was confirmed, will be placed in service during the last quarter of 1986--was already recommended in April by the technical commission of the European Radio-Broadcasting Union.

According to a joint communique, the two ministers' decision will make it possible to "meet the demands of European community organizations and the recommendations of the European Radio-Broadcasting Union and of the European industry for the creation of a single European color TV standard, and to fulfill the wishes expressed for better quality and expanded utilization possibilities."

At the end of the year, a report will be presented to the European governments' council to recommend that the D2 Mac Paquets broadcasting system be used throughout Europe. However, the system has not only proponents. Some--like the Luxembourg Telebroadcasting Company--criticize it in particular for its cost.

The "D2 Mac Paquets"--a standard that has been advocated for a long time by the French and the Germans--seems to have a good chance of triumphing for good over its British rival, the "Mac Paquets" standard. It has two major assets: on the one hand, its relative technical simplicity which--if a decoder is used--enables it to be used also by surface, cable or radio-relay networks (however, via satellite it will transmit only a single image program with several sound tracks in various languages); on the other hand, the fact that the British direct-TV satellite now seems to have been abandoned.

The French and German ministers also announced that they would "continue their consultations concerning a second generation of broadcasting satellites, which could be placed in service during the 1990's" and which "can be produced at a reasonable cost thanks to European technology and knowhow."

The European telecommunications organization Eutelsat met in Paris earlier this week and already decided to recommend a future European telebroadcasting satellite systems to replace the national systems.

9294
CSO: 5500/2689

BRIEFS

SATELLITE DOCUMENT TRANSMISSION SYSTEM--The European Commission and the European Space Agency (ESA) have decided to cooperate on the implementation of a high-speed document transmission system via satellite, the Commission announced on 2 July in Brussels. The system, called "Apollo," will provide digital transmission of long messages, in particular integral document facsimiles. Apollo will use one of the Eutelsat-1 communications satellites launched by the Ariane rocket in August 1984, which covers all of West Europe from a geostationary orbit. The system will be open to many users and will include about ten information suppliers. Eutelsat (European Organization for Satellite Telecommunications) and the Post and Telecommunications administrations are also collaborating to "Apollo," the Commission indicated. [Text] [Paris AFP SCIENCES in French 4 Jul 85 p 33] 9294

AERITALIA BID ON EUTELSAT-II--Aeritalia, the largest Italian aerospace company, just joined the team led by Aerospatiale to bid on the second-generation satellite project of Eutelsat (Eutelsat II). The call for tenders involves designing and building three satellites that will cover Europe and include 16 KU-band repeaters. The first flight model is to be delivered in March 1989. As is known, the team led by Aerospatiale includes five other European companies among the largest in this field: Alcatel-Thomson-Space (France), ETCA [expansion unknown] (Belgium), Ericsson Radio Systems (Sweden), Marconi Space Systems (Great-Britain) and MBB-ERNO [Messerschmitt-Boelkow-Blohm/Erno] (FRG). The projected satellite design is based on the Spacebus-100 platform. This new cooperation of Aerospatiale and Aeritalia in the field of space follows the two companies' association to produce the ATR-42 commuter aircraft and further strengthens the European character of the industrial space cooperation that was started several years ago. [Text] [Paris AFP SCIENCES in French 4 Jul 85 p 33] 9294

EUTELSAT JOINT EUROPEAN DBS SATELLITE--Paris--The European satellite telecommunication organization will probably undertake the study of a joint European direct television satellite. Meeting in Paris on 24 and 25 June, representatives of the 13 signers of the Eutelsat organization, among which France, decided to "recommend to the Eutelsat board to authorize and finance the study of a future multinational European project for direct satellite broadcasting," announced a spokesman for the organization on 26 June. The decisions relate to the recent proposal made by Eutelsat's secretary general, Andrea Caruzzo, to undertake the study of a direct television satellite with 12-14 channels. Eutelsat currently has 20 member countries, among which are the 13 signers, and its two operating telecommunication satellites provide a significant portion of the intra-European connections. The decision to pursue this study for replacing national television satellites with a more economical international system around 1992, must be taken by Eutelsat's board next week in Rome. In Paris, it was acknowledged "that many technical and economic problems, as well as as questions of regulations and compatibility of standards" existed and had to be solved. [Text] [Paris AFP SCIENCES in French 27 Jun 85 p 44] 11,023

CSO: 5500/2686

BELGIUM

D'HONDT ON NEGOTIATIONS FOR RTT CONTRACT

Brussels LE SOIR in French 17 Jul 85 p 7

/Interview with Paula D'Hondt by Guy DuPlat for LE SOIR; date and place not specified/

/Text/ If this government still wants--is able to--settle the problem of the so-called RTT /Telephone and Telegraph Administration/ "contract of the century," it will have to do it Thursday or never. The "solution" concoted by Bell Telephone and the General Company is known. The "contract of the century" would include not only an order for new telephone exchanges for the next 10 years, but also for transmission and certain terminals. It would also embark us on the super network called RNIS, which will allow businesses to carry sound, images and computer data at the same time, all at an acclelerated speed.

Such a "solution" would have the advantage of preserving the telecommunications industry in Flanders while providing Wallonia and Brussels with a greater number of orders. It would very rapidly modernize our telecommunications network and offer the General Company and ACEC the famous "admission ticket" into the world of telecommunciations. But this Belgian-style compromise would cost an arm and a leg (176 billion in 10 years). According to the "solution" they prepared at Mr Eyskens request, Bell would receive 50 percent of the order, the General Company 30 percent and the "others" the remaining 20 percent. Will this complicated structure hold together? It seems doubtful when one hears the many questions raised by Mrs D'Hondt with whom we met. She echoes the RTT's misgivings--and she has always enjoyed the full support of the minister of social affairs, Jean-Luc Dehaene, a formidable ally.

/Question/ Would you like a decision this week, so that bidding can--finally!--be opened?

/Answer/ I want a good decision. Good not only for industrialists, but also for the RTT and users. If that isn't possible, we will have to wait until after the elections.

/Question/ But that would delay the final decision until the summer of '86 at the earliest, wouldn't it?

/Answer/ Yes, But the current agreement with Bell and ATEA does not run out until October 1986 and allows us to put through orders until that date. Since there is a 2-year time lag between order and delivery, we can wait until as late as 1988.

/Question/ But if it isn't settled now, this explosive dossier will be on the negotiating table of the next government. Isn't that even riskier?

/Answer/ The choices will be difficult whatever the timing. And it may be that, before the elections, concessions are impossible.

/Question/ Doesn't this absence of a decision, which would allow you to simply prolong the current contract, suit your purposes?

/Answer/ Not at all. That's false. All the juggling that has been going on for months could have been avoided if the proposal of Mr De Croo and myself had simply been followed: consult the four Belgian telecommunications firms--Bell, ATEA, Philips and Siemens. I understand the Walloon desire to upgrade its industrial fabric. Believe me, these four firms would have been ready to advance some proposals for establishing themselves in Walloonia. All the firms are conscious of the need to do something in Wallonia: Bell, ATEA, Siemens, and Philips made proposals. For example, ATT, allied with Philips, proposed setting up a European research center in Wavre. But no, we had to involve foreign firms, Ericsson and CIT-Alcatel.

/Question/ But it would have been simpler to agree to consult everyone. The procedure would already be underway, wouldn't it?

/Answer/ (Angered) RTT had intended to consult everyone in advance, including foreigners, in order to put together a complete dossier. But at that time, the minister Maystadt sent me a letter requesting that only businesses established in Belgium be consulted in advance, in order to favor an industrial policy. I accepted that argument. And the RTT only consulted the four Belgian firms. And then, Jean-Maurice Dehousse and CIT-Alcatel enter the picture. Suddenly the order changes. Everyone must be consulted. But I didn't want to change. I refuse to play these political games.

Remember also June of 1984, when Bell and ACEC signed an accord. I don't get involved in industrial affairs, but in my opinion Bell had gone too far. Shortly thereafter, Ericsson appears on the scene. Its arrival was felt as an aggression by Flanders.

Too Fast

/Question/ Let's get back to the present story. What do you think of the Bell-General Company decision?

/Answer/ I submitted it to RTT. The latter has no comment on the highly political aspects of this "solution." But it has questions. The government seems decided on the accelerated renovation of exchanges, even though in RTT's

opinion, it doesn't need this to satisfy the needs of its clientele. The government has thought of industrial interests, but has it given enough thought to those of all users?

/Question/ What does that mean?

/Answer/ The accelerated renovation of our exchanges will cost an extra 25 billion in 10 years, which is likely to be paid by small users. I might add that it is false that our public telephone company is behind. Holland will not completely digitize its exchanges until 2010, Germany not until 2020. By accelerating the renovation, we want everything already digitized in 1996!

/Question/ The government also wants to rapidly introduce the RNIS?

/Answer/ And the RTT is sceptical. It wants to introduce the RNIS by 1988, even though the CEPT and CCITT international norms won't be ready until 1989. Bell and the General Company anticipate more than 500,000 RNIS unders in 1995, while RTT's calculations show that there shouldn't be more than 350,000.

Questions and a Debate

/Question/ Does this mean you are opposed to the spirit of the Bell-General Company accord?

/Answer/ No. I understand the Walloon desire to renew its industrial fabric. I understand the necessity of political compromise. But not at any price. A company like the RTT, which has annual sales of 56 billion and employs 30,000 people, msut not be sacrificed to aid a few industrialists. The RTT must not be endangered.

/Question/ Then what are your conditions?

/Answer/ I'm raising questions. We should get the lowest prices. The telecommunications industry is in a period of transformation and prices will continue to drop. We should therefore anticipate some formulas for price revisions every 3 or 4 years.

/Question/ Will the government subsidize companies to develop products?

/Answer/ It would be contrary to the general policy of reducing subsidies. I wonder also if the ACEC and General fully realize the commitments they will be drawn into. Will they be capable of carrying out the indispensable research and development? Who will finance the acceleration of programs? If Martens and Maystadt want to build fewer highways and transfer a portion of the public works investments to telecommunications, I entirely approve. But the RTT will also have to be recapitilized, its self-financing capacity increased and its debts reduced. Tremendous social problems concerning recycling of RTT personnel are raised. The unions are quite worried. In short, I think there are many choices to be made: social, industrial. There will have to be a thorough debate; this will be the task of the next government.

9825
CSO: 5500/2688

DENMARK

HYBRID CABLE NETWORK TO PROVIDE SERVICES TO BUSINESSES

Copenhagen BERLINGSKE TIDENDE in Danish 23 Jul 85 p 15

[Article by Sten Tolderlund: "Hybrid Network Now Tightens Around Country's Cities--But Country's Cities Able To Use Hybrid Network As Link In Promoting Business, In Number Of Public Institutions, In Connection With Cultural Policy Considerations"]

[Text] The net is tightening more and more around the cities, and so too is the hybrid network. This is happening now that the legal basis for the establishment of the network has been put in place. As a result, the cities will play a central role in planning the network.

The aim of the hybrid network is first of all to give viewers more television programs from neighboring countries and from satellites. But in the long term the network will be the point of departure for a wide-band network for the individual subscriber which will cover the country.

An expansion of the hybrid network will acquire major significance for the country's cities. In any event, this is the opinion of the National Federation of Cities, which points out that, as a link in their business promotional activities, the cities will be able to open up the possibility of businesses' affiliation with the network.

The network is also of interest for a number of public institutions, because in the future, a city administration will increasingly be working with electronic data processing. In this connection, there exists the prospect of decentralizing parts of city administration to a greater extent than today.

The cultural policy interests of the cities will also be an important city aspect. In the first instance, there will be telephone companies which, on the basis of anticipated demand, will decide which foreign programs are broadcast over the network. In this connection it is noted that channels will be held open for local television, which consequently can be broadcast via the hybrid network.

In order to prepare the cities for the upcoming negotiations with telephone companies about the hybrid network, the National Federation of Cities has put together a 30-page brochure, "The Hybrid Network--the Cities and Planning," in which basic information is given about the political compromise over the hybrid network and the legal basis for the network, among other subjects.

12789
CSO: 5500/2852

DENMARK

MOBILE TELEPHONE EQUIPMENT TO BRITISH, AUSTRIAN NETWORKS

Copenhagen BERLINGSKE TIDENDE in Danish 13 Jul 85 Sec III p 5

[Article: "Danish Equipment For Mobile Telephones: Celwave R.F., Inc., Hillerod, Delivers 40-Million Kroner Of Equipment To English, Austrian Mobile Telephone Networks"]

[Text] While Storno, the Danish mobile radio manufacturer, comes up with one big order for mobile radios and communications equipment after another, there is yet another Danish firm which can bring back millions to Denmark in exports. Celwave R.F., Inc. of Hillerod has just sold 40 million kroner worth of filter equipment to base stations for both receivers and transmitters to England and Austria.

"We are the only concern in Europe which manufactures this type of equipment. In layman's terms, what we are delivering is filters, so those people who use mobile radios cannot listen to one another," Erik Nielsen of Celwave R.F., Inc. said.

The concern, which has already sent off the first two shipments, estimates it will have fulfilled the two orders by spring of 1986.

According to Erik Nielsen, the orders, which were won in competition against Swedish and American concerns among others, will translate into increased employment at the Hillerod concern, which presently employs about 90.

12789
CSO: 5500/2852

FEDERAL REPUBLIC OF GERMANY

BRIEFS

FRG SATELLITE SYSTEMS CONSORTIUM--Munich--The companies ANT Nachrichtentechnik GMBH, ERNO Raumfahrtechnik GMBH, Standard Elektrik Lorenz Ag, and Dornier System, have formed the consortium GESAT (Gessellschaft fur die Vermaktung von Fernmeldesatelliten-Systemen) whose objective is the marketing of German telecommunication satellites. GESAT will offer on the international market complete satellite systems, derived from the DFS Kopernikus, actually developed for the German mails agency. [Text] [Paris AFP SCIENCES in French 27 Jun 85 p 39] 11,023

CSO: 5500/2686

UK PREPARES TO ABANDON SATELLITE TV PROJECT

Paris AFP SCIENCES in French 20 Jun 85 p 37

[Unsigned article]

[Text] London--The consortium formed by 21 British companies to start the broadcasting of British television programs by satellite, is ready to announce that it will abandon its efforts, an informed source indicated on 17 June in London.

The end of this research, started two years ago at the government's request, would also result in dropping the construction of a television satellite whose launching was initially planned for 1988. The entire project, opened with great publicity in 1982 in the United Kingdom, represented an investment of the order of 600 million pounds over a ten-year period.

The 21 companies directly involved in the project are the BBC and the 15 independent television companies operating as ITV, as well as five companies which are not directly involved in the production of television programs, among which is the large electronics enterprise Thorn-Emi.

A reliable source in London indicated that after a meeting held at the end of last week, the representatives of these companies decided to recommend to their respective boards of directors that the project be abandoned. But there was no certainty that a last minute decision would not restart the project, explained the same source.

The British project, which would have been a counterpart of the French TDF program and which is similar to projects in FRG, was hurt by the obligation made to the 21-company consortium, to use a British-built satellite. The latter would have been built by United Satellites (UNISAT), a company formed by British-Telecom, British Aerospace, and the electronics company Marconi.

The cost quoted by Unisat far exceeded the proposals made to the consortium by American competitors, represented in Great Britain by BRITSAT, which offers the services of an RCA satellite, and by the French TDF, which proposes the lease of one channel on a French satellite whose launching is planned for July 1986.

According to indications from specialized British circles, BRITSAT's proposals are cheaper by 10 million pounds over at ten-year period than those of UNISAT, while the French offer the lease of one channel on their satellite for 9 million pounds per year.

Even before the abandonment of the British research, ITV's 15 companies had started negotiations in May with executives of the French project for the eventual lease of one channel, which would permit the retransmission of their programs by satellite not only to the European continent, but toward Great Britain as well.

11,023
CSO: 5500/2686

END